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THE SPHERE, MARCH 21, 1942
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THE SPHERE

Vol. CLXVIII No. 2200 WITH WHICH IS INCORPORATED THE GRAPHIC MARCH 21 1942

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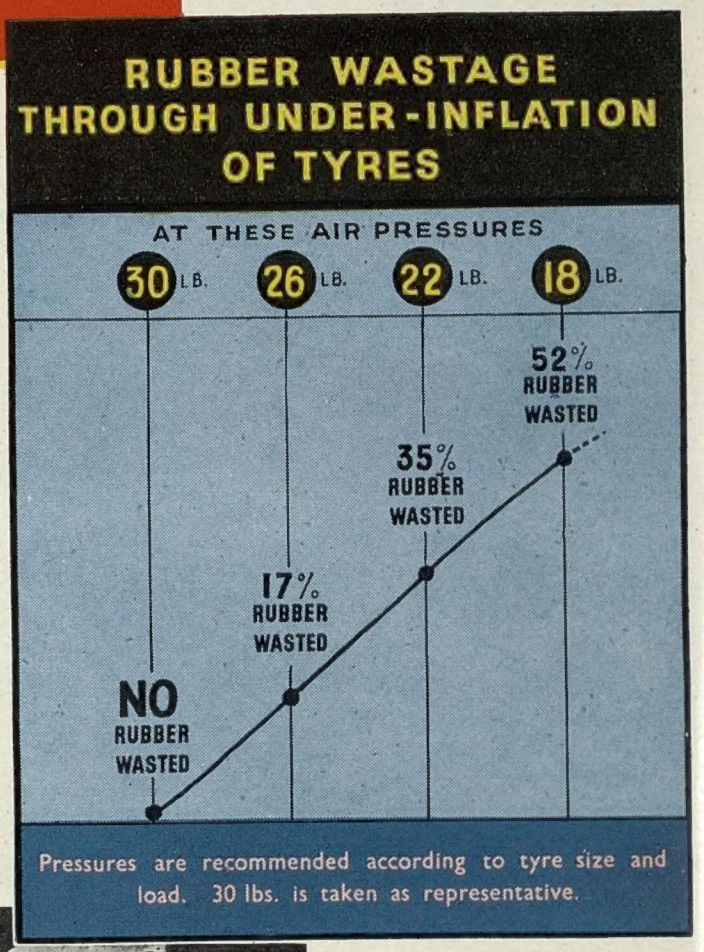
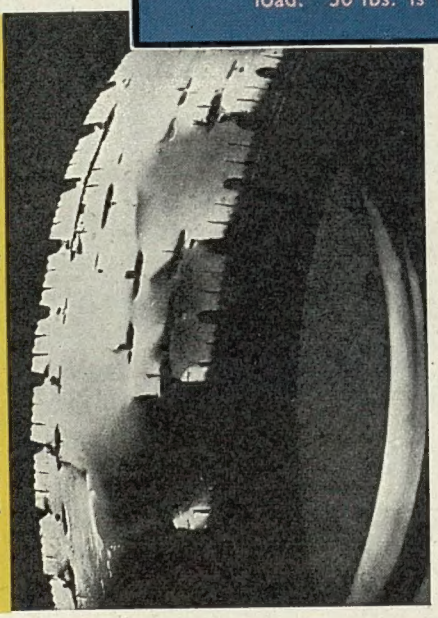
Tyre Economy

There is a real threat to the world's supply of rubber and it is essential that tyres now in use should yield the maximum service possible

INFLATE TO RECOMMENDED PRESSURES

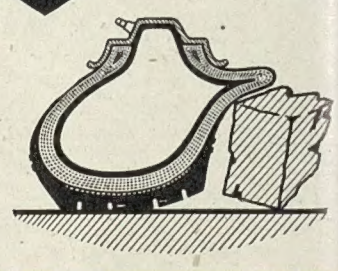
It cannot be too strongly stressed that a tyre consists of a cover, a tube, *and the air inside the tube*. It is the air that carries the load and if the air pressure is incorrect, the cover and tube cannot work efficiently. UNDERINFLATION always results in rapid or irregular tread wear and permanent damage to the casing. Once the casing cords have broken down the tyre is not only dangerous but unfit for remoulding. Thus many thousands of miles' potential service are completely lost over and above those directly wasted by excessive tread wear.



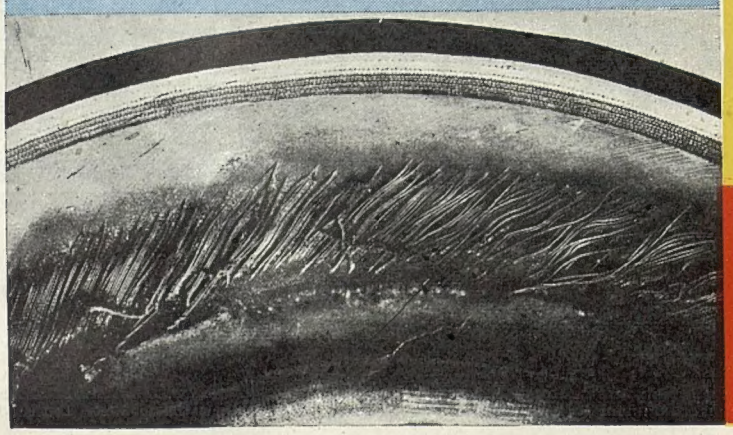


How the rubber wears away. This tyre shows a typical symptom of underinflation—irregular tread wear. It is due to the fact that a 'flabby' tyre forms ruckles just in front of the point of contact with the road. As the tyre revolves, the ruckles are dragged over the road surface giving the tyre the 'scoopy' appearance illustrated. Even more serious is the invisible damage to the cord carcase of the cover.

Underinflated tyres often sustain concussion fractures as a result of striking kerbstones and pot-holes. A portion of the tyre wall is folded and nipped against the wheel rim, frequently cutting through the casing in two places. Damage of this kind may not always be visible from the outside of the cover.



Running a tyre in a deflated condition causes separation of the cords in the walls, rendering the cover unfit for further service. In order to give a clear view, the cover has been cut in half.



To get the greatest possible mileage from your tyres . . .

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DUNLOP TYRES *Last Longer*

THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly
London, March 21, 1942

THE CANNON-GUNS OF A BRITISH FIGHTER AIRCRAFT: THE WEAPONS WHICH HAVE BEEN USED BY THE R.A.F. DURING THEIR DAYLIGHT SWEEPS ON ENEMY TERRITORY AND FOR LOW-ALTITUDE ATTACKS ON GERMAN SHIPPING

By day, fighters of the R.A.F. are carrying out daring sweeps over Northern France and Belgium: they are also attacking enemy shipping all along the Occupied Coasts. Fighters armed with cannon such as that shown above regularly take part in strafing Nazi armed surface craft and E-boats: they have even been known to go down and spray a German destroyer! The cannon-guns are mounted in pairs, two in each wing, and they fire shells which are powerful enough to cause enemy bombers and fighters to disintegrate in mid-air. The Hurricane seen above is one of a squadron operated by New Zealanders: it is painted black because its principal activity is night-fighting over Britain and over Northern France. Note the size of the shells in this picture!

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THE BOARD OF ADMIRALTY: The Rt. Hon. A. V. Alexander, M.P., First Lord of the Admiralty, and an Elder Brother of Trinity House

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A WAR NEWSLETTER —No. 133

1, NEW OXFORD STREET, W.C.1

Bushido—A world which has grown almost callous—or at least insensitive and capable of oblivion—concerning the appalling sufferings of humanity year after year under the iron heel of tyranny, has taken note of the barbarities and atrocities of Hitler's latest ally, and has been jolted again to consciousness of what war against sheer savagery means. We forget because we must. War always hardens men's hearts. We dare not think; we dare not give play to imagination. We in Britain were vividly alive to the imbecile brutality of Nazi warfare a year ago. Hong Kong is a long way off, but our neighbours, who have sons and lovers there, bring Hong Kong to-day to our own doors, and the whole nation is sickened and appalled by the nameless tortures inflicted by the Japanese on the defenceless men, women and children of Hong Kong. And, filled as our hearts are with horror, there is just room for surprise also. We always knew, if we knew anything about the Japanese, that those polite, eager little Orientals who visited London on business or study bent, were at home hard, brutal, boastful and insulting to foreigners, and lived in a world made for men and for men's lusts, and covered their essential barbarism only with a veneer of civilisation, and that principally as a trade window-dressing to advertise efficiency and modernity. The Western culture which once they sought and craved for, they learned to envy first and then to despise and hate. They were still too deeply rooted in the barbarism of the dark ages to derive from it anything nobler than its trade secrets and its social amenities and its armament patents. Nothing can ever excuse or condone the horrors of Hitler's deliberate brutality to conquered races. But one part of Hitler's war machine, what remains of the old German Army tradition, when it learns the full story of Japanese savagery employed against gallant enemies overborne by weight of numbers, may still feel a sense of shame and horror at being compelled to share in the ignominy of such victories, which bring the word "Axis" into the *Index Expurgatorius* of all humanity. We in England, far from Hong Kong and Malaya and Java, far enough from the prisons and camps of Poland and Germany and Czechoslovakia, know to-day (and, please God, will remember to-morrow) what we are up against in our fight against barbarism.

A Lenten Penance.—"Set yourself," wrote a friend, "a Lenten penance and restrict your listening to the B.B.C. to one news bulletin per day. You will find it good for your resolution and even better for your spirits." Excellent advice, on the face of it. But when you examine it you realise how complicated a business may be the simplest plan of self-discipline. This plan bristles with unanswerable objections. First of all, it assumes that one craves for the news bulletins, as one craves for *marrons glacés*. But in truth the news of the day (during this temporary black patch) is more like a street accident than a crystallised fruit. You don't *want* to look but you can't keep your eyes away from the body on the pavement and the crowd in the street. If the day's news were nothing but Matapans and Tarantos, reason would that we should discipline our pride by rationing our bulletins. But when it treats, as of late, with one or two more bitter humiliations to Allied arms, or loppings-off of Empire, logic urges that no better Lenten penance (to castigate pride and vainglory) can be devised than to rise early and go late to bed, so that no daily bulletin be missed. And yet my friend's conclusion is perfectly sound. To ration my listening cannot but be good both for my resolution and my spirits. I hope I shall not be taken *au bout de la lettre*. I hope the Jack-in-the-box who leaps out upon any appearance of *defeatism* will not waste his spring on me. Indeed, though I dislike bad news, I am one of those who prefer to take it neat, and not diluted with explanations, justifications and palliations. I believe the tide will turn and we shall in due course recover some of the lost ground in one area of conflict and continue to make progress in others; and I have enough experience of war to be certain that all wars hold these "black weeks" periods. (In June 1918 the news from the Western Front seemed so bad that weaklings believed it was all over for us bar the shouting [in German.] A week or two later the tide had finally turned and Germany was fast breaking up—a process far advanced already even in April 1918.) As things go (and the B.B.C. goes), I think the best Lenten penance I can do is to listen to every news bulletin and every intolerable repetition of our setbacks and time-lags, complete with its palliations and explanations, its promises and glorifications of tiny, minor successes ("a Messerschmitt was brought down by our air defences . . . .") At the same time, it would be "good for my resolution" if I rationed my listening. Explain it, if you can. I am no casuist. But this I do know. Constant news bulletins are not conducive to the achievement of a calm judgment and a right sense of proportion. The events of a day build up the history and battle-map of a year of war. But the only documents worth studying for a right judgment of our progress and chances of success are the calm summary of business done and the profit and loss account of the "annual report."

Spades are Trumps.—A great change has been wrought in our village in the last few months. Six months ago there were plenty of men who could be persuaded to "come and do a bit of digging," of a sort, at a price. To-day there is not a man or boy available. They have been absorbed. Those who remain in vital rural industry are now at the eleventh hour kept so busy with H.G. training that they have no time to spare for their patches, and private gardeners have become—museum pieces. The abnormal winter has, of course, contributed to a pretty acute problem. The relatively quiet time on the farms is over and during that period the ground was iron and no garden work could be done. Last year most of us fed our households and dependants on the produce of our gardens, without recourse to the shops which deal in vegetables and fruit. This year it is certain that many patches will go out of cultivation. For who will do the digging and whence can the necessary manure be got? The able-bodied women who owned the larger gardens have lost all or nearly all their female servants and have perforce become cook-generals. The men, even old men, are pretty well occupied. And the calendar will not stop moving, nor the sun stand still. It is all to do, and alas! there is much to be learned of the first industry of the human race. I have dug for years. I am only just discovering that I have always dug "all wrong." My gardener did not bother to teach me in the old days, because he was only interested in raising vegetables and left me to "fool around" in the herbaceous border in my amateur way. So it was that I never *heard* of the essential rules of the game, of "standing behind your spade," of that vital turn of the wrist, of square and deep trenching. I used always to begin from the right and turn over to the right; I nullified my work by smoothing over with a rake the irregularities of my digging, thus de-aerating that which I had dug to aerate. Now, in a grim emergency, in a bitter school made bitterer by lumbago, I am picking up a few lessons at the rate of 8 square yards per day.

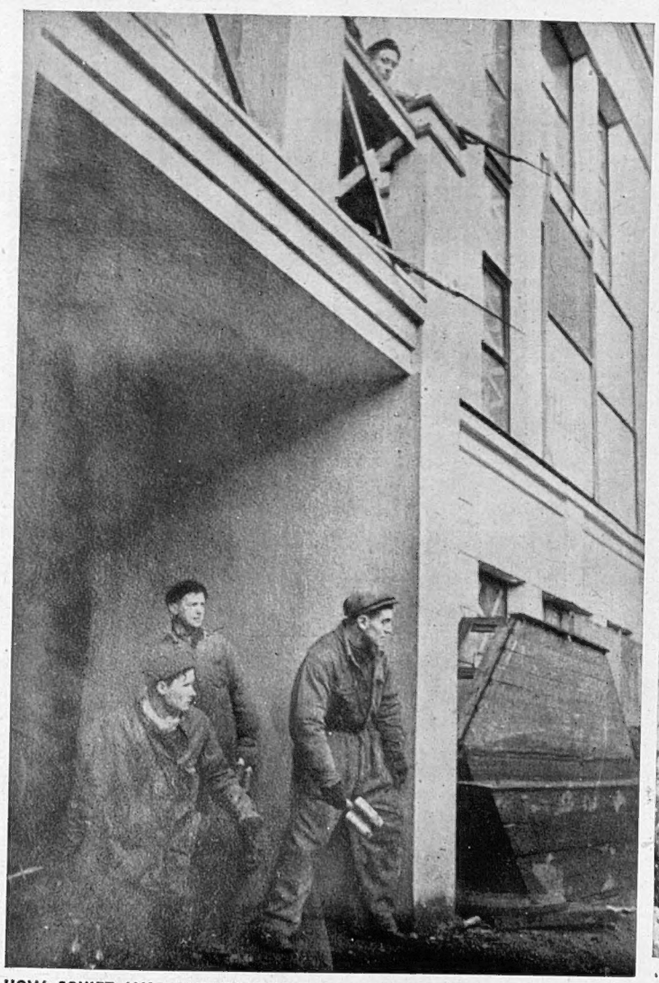
A Scrap of Paper.—A "scrap of paper" made history in the first Great War. It may make all the difference between victory and defeat in the present war. The need for paper salvage has become so vital that the Government has now made it a punishable offence to destroy it by any means. You may use greasy paper still to light your fires, if you have devised no better method, and you may still tear up confidential documents before sacking them for pulping. It is now every man's duty rigorously to obey this vital order. He must preserve, grade, sort and keep dry every scrap of paper and cardboard, and must see to it that it reaches salvage-collection dumps. It must never be put in the dustbin, and never treated as refuse. Carelessness has lost us already half-a-million tons of this vital munition. The public does not yet *begin to comprehend* the crime of paper waste. I shall refer but to one aspect. The most remote houses in rural areas are still made hideous by the jettisoned snowstorms of cartons and wrapping paper, thrown out by tradesmen's van-men. A few years before the war, a drive was made to check one aspect of the desecration of the countryside—the beastly broadcasting of waste paper. There was then no idea that paper could be used twice. It was merely a question of decency, of taste. The by-law was hardly ever enforced. About a dozen people received trivial fines and the "informer" was usually snubbed by the Bench. It was clearly proved that authority and the common man alike regarded an anti-litter by-law as a vexatious piece of paternal legislation. To-day it is not a question of taste, but of survival. It is not a matter of amenity, but of life and death. And we have a long road to travel before the public as a whole will get a faint glimmer of the crimes which they are still hourly committing by their carelessness and refusal to comprehend the need of paper salvage. Propaganda against litter totally failed. Unless an intensive campaign of inspired propaganda and exemplary punishment is now instantly launched, the public will continue to disregard public safety, as it disregarded public amenity. In this matter we have hitherto proved ourselves to be as tasteless, as feckless, as recklessly extravagant, a race as exists in Europe or in Barbarism (which is perhaps a synonymous term).

THE OLD STAGER

THE "NEW WEAPON" WHICH THE RUSSIANS HAVE BEEN USING AGAINST THE GERMANS AROUND STARAYA RUSSA: An aero-sledge which is capable of 60 m.p.h. over the snow, and which has been used as a troop-carrier in attacks on enemy positions

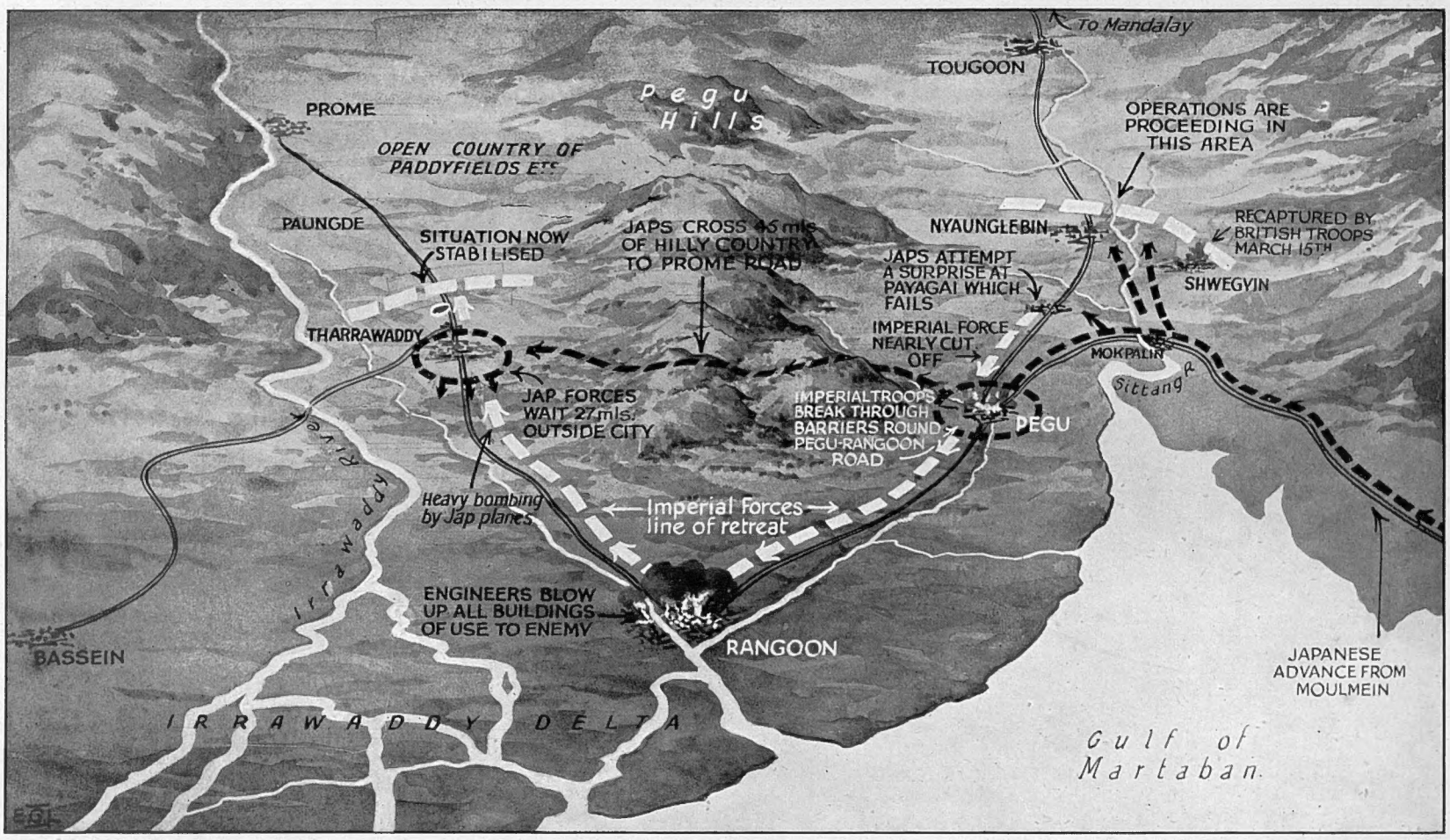
FROM the RUSSIAN FRONT

The use of these "secret weapons" was revealed by the Russians recently, in connection with the fighting around Staraya Russa, where a large German Army is now trapped and being systematically attacked. The aero-sleighs are thrown into action rather like tanks—but, of course, at much greater speed: they charge in perfect order and then disgorge machine-gunners right at the point to be attacked. The sleigh then returns for supplies for the fighting men! "The aero-sleighs," writes Mr. Cholerton from Moscow, "look rather like medium-sized cabin planes, with their wings torn off, and mounted on skis of formidable size and specially sprung. They charge along the snow like a fast plane landing—but go on charging at 60 miles an hour."



HOW SOVIET WAR WORKERS DEFEND THEIR FACTORIES: No questions of ethics, or of rights or wrongs! When the Nazis approach a Russian town, the workers set to with rifles (as above), or with Molotov Cocktails, slung in pairs (as below)

"ADVANCED GERMAN TRENCHES ON THE RUSSIAN FRONT": That is the sole information received with this picture from an enemy source. And little wonder! Throughout the winter German soldiers have been called to suffer, and fight, in holes in the ground like this—and in the depths of a Russian winter. Can one doubt that thousands of the enemy have perished from the bitter cold alone?



THE SITUATION IN BURMA, SHOWING THE AREAS AROUND PEGU AND THARRAWADDY where Japanese and British forces are closely locked, and also the route taken by the enemy across the hills to the Prome road—*Drawing by E. G. Lambert*

FIGHTING IN BURMA

After the retirement from the Mokpalin bridge-head on the Sittang River, it was not easy to follow the movements of the British forces in their general movement towards the north-west. It was claimed by the Japanese that they had occupied Pegu, and this was true—for a time, when British forces were retiring by road to Rangoon. At Pegu the railway from Rangoon runs through the city on its way northwards. The fighting appears to have taken place close to the old moats and the remains of the old city walls. Japanese planes dropped bombs and incendiaries in the endeavour to fire the town, whilst enemy troops endeavoured to retain a tight circle round the area. But the British column succeeded in fighting its way through on to the Rangoon road, and part of the force would appear to have made its way to the southern capital, for correspondents have described the setting out of a British force retiring northwards up the road to Prome. At Tharrawaddy, a distance of 27 miles from Rangoon, this force found its way blocked.

The Japanese had cut across westwards from Pegu over the intervening hills, a distance of 45 miles, and were occupying positions in the teak forest which here lined the road. The assault on the road block was the occasion of some stiff fighting, but this time the sudden appearance of masses of Japanese bombers and fighters added to the difficulties of the task.

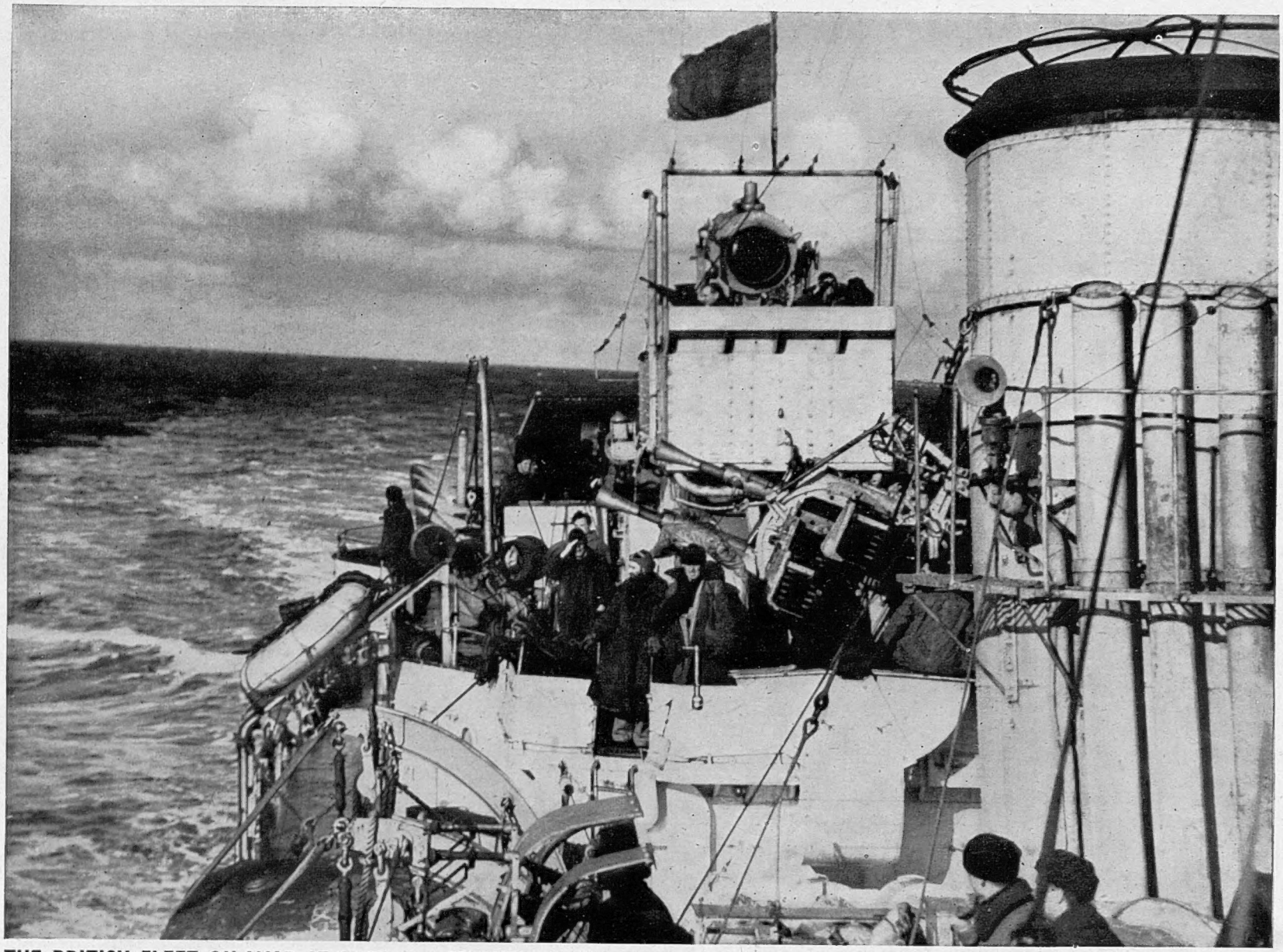
Later news stated that the Japanese forces were on the road to Prome, but their numbers and movements were not definitely stated. At the same time a British force was reported to be on the Mandalay road in the region of Nyaunglebin-Shwegyin. Here they were evidently in close touch with opposing Japanese, and more detailed news was being awaited of their movements.

JAPANESE FIELD ARTILLERY MOVING UP TOWARDS RANGOON: In this case the enemy are using horsed transport; in other places they have made use of elephants

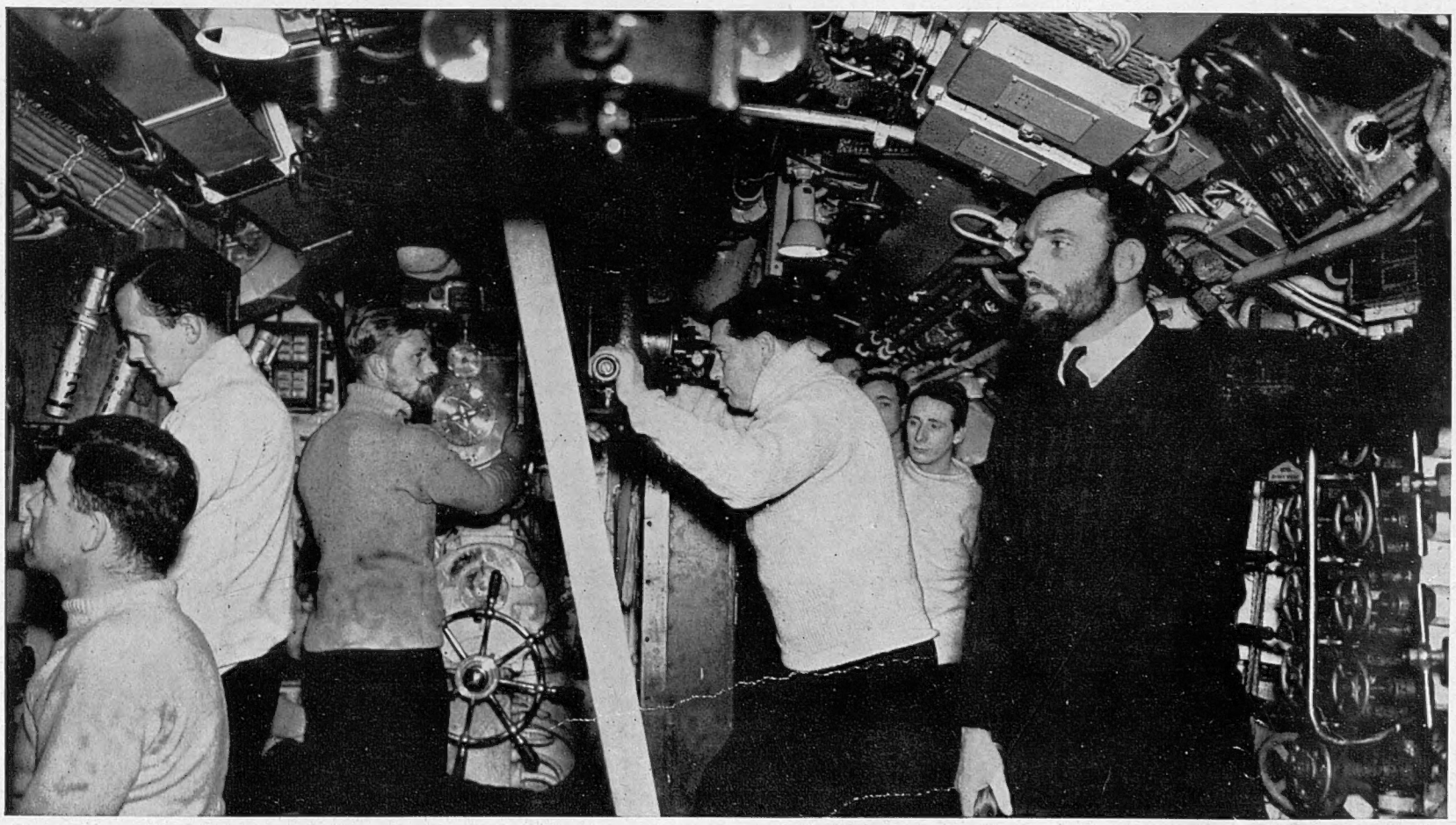
THE GOVERNOR OF BURMA SEES FOR HIMSELF: Not knowing which way to turn in face of the oncoming Japs, and scared by the almost daily bombing, this Burmese evacuated the city of Rangoon with his family—only to return again very shortly afterwards. Sir Reginald Dorman-Smith, on left, is listening to his story (obviously one of terror!) at the Rangoon Railway Station. Later, the city was cleared of all European civilians as the enemy came within shooting distance

AFTER A RAID ON THE BURMESE CAPITAL: The remains of a Japanese bombing aircraft which did not return; it was shot down over Rangoon

THE BRITISH FLEET ON WAR SERVICE



A DESTROYER HAS JUST RECEIVED A SIGNAL WHICH WARNS OF AN IMPENDING ATTACK BY HOSTILE AIRCRAFT : Gun-crews immediately take up their Action Stations and maintain a careful watch



H.M. SUBMARINE "UTMOST" RETURNS

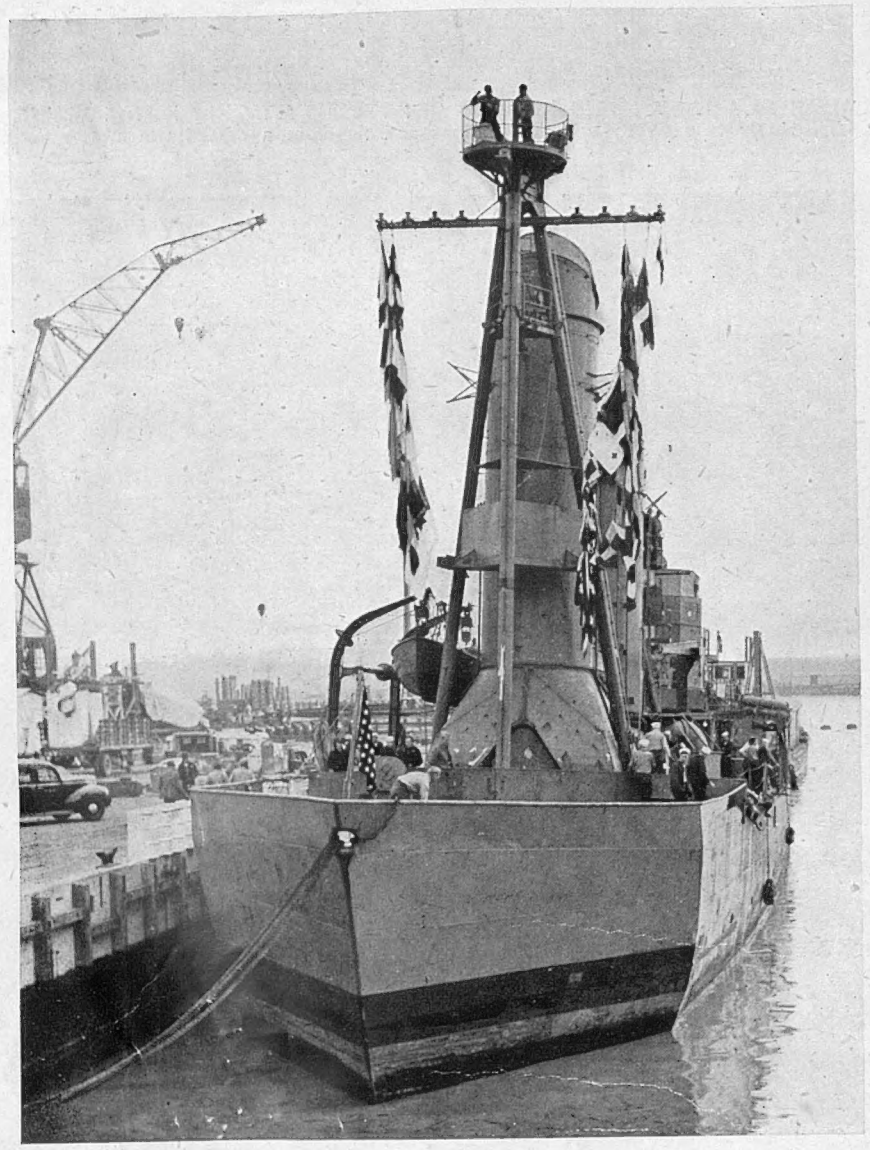
After a year of very useful service in the Mediterranean

OFFICERS AND MEMBERS OF THE CREW AT THEIR STATIONS, with the commanding officer at the periscope : The submarine *Utmost* (Lt.-Comm. B. D. Cayley, D.S.O., R.N.) has just returned to the United Kingdom from a year's service in the Mediterranean ; during that period she torpedoed and almost certainly sank an Italian cruiser, torpedoed seven enemy supply ships and a deeply-laden Italian transport, which blew up ; carried out a successful gun action against a damaged enemy supply ship laden with motor transport ; rescued a Blenheim bomber crew of four ; and carried out other successful exploits. Her achievements are all recorded on her special flag, which is black with a skull and crossbones, and insignia recording her exploits

The AMERICAN NAVY ATTACKS in the PACIFIC: *First Pictures of the Assault on the Gilbert and Marshall Islands*

DAWN PATROL OVER HONOLULU: An Army heavy bomber of the Hawaiian Air Force checks the identity of a warship cruising in the Pacific below. Aircraft are now co-operating with the U.S. Navy in patrolling the vast areas of the mid-Pacific

In the continuous task of guarding the vast mid-Pacific stretches surrounding the Hawaiian group of islands (where Pearl Harbour, the great naval and air base of the United States, is located) are the Army's giant Flying Fortresses belonging to the Hawaiian Air Force. To early-risers in Honolulu, the roaring motors of the Dawn Patrol, as they wing out to sea for reconnaissance duty, provide a heartening and welcome sound. By means of regular flying patrols large areas of ocean can be watched, both for surface craft and for submarines



THE U.S. DESTROYER "SHAW" WILL SOON BE READY FOR ACTION AGAIN: As a result of the Japanese attack on Pearl Harbour on December 7, the *Shaw*, a 1937 destroyer of 1,500 tons, was reported to have been sunk. Recently we showed a picture of this vessel as she lay at her moorings after the attack. Nevertheless, this vessel will soon be back in service. Equipped with an emergency stub bow and a temporary bridge on the after-end of the ship she has now arrived at a U.S. Pacific coast port for repairs. Within a few weeks, Navy officers have stated, a new bow and bridge now under construction will have been fitted

AFTER THE BATTLE: Sailors asleep after the heavy attack on the Marshall and Gilbert Islands. The scene on the deck of a unit of the U.S. Fleet, which took part in the bombardment

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THE OUTSTANDING LESSON OF MALAYA, AND THE FAR EAST GENERALLY, IS THE NEED FOR ANTI-AIRCRAFT PROTECTION FOR THE INFANTRY: In this picture the defenders in a fixed position are under artillery fire from the left; and at the same time they are being dive-bombed from the air. Thanks to the effective A.-A. fire provided by the mobile guns, however, the attack by the enemy's aircraft is being broken up—*Drawing by W. G. Whitaker*

FIGHTING METHODS OF TO-DAY

An Examination of the Lessons of the Far East in Dealing with Attack from Land and Air

By DONALD COWIE

LITTLE has been said about the actual "style" of the fighting in Far Eastern theatres, though undoubtedly the methods adopted may have been responsible in large measure for our disasters. Major-General Gordon Bennett, of the Australians, was the best local Commander, and he insisted after his escape that the strength of the Japanese Army lay "not so much in its soldiers as in its methods." For instance, many people at home have found it difficult to understand the continued vulnerability of our troops to air attack. Couldn't they learn to dig themselves in, or organise special anti-aircraft defences (apart from big guns)?

The answer to the first part of that question is that our men have suffered terribly in this war, and continue to suffer, from a conflict of tactical doctrines above them. Last war it was much more simple. To hold a position, the first thing you did was dig yourself in, thus securing primary protection from shells and bombs. This doctrine dominated the minds of our military commanders till 1940, when the Germans demonstrated that fixed fighting was temporarily finished. So the trenching-tool was flung aside. Training was re-orientated towards mobility above all. Our fellows dashed through Malaya in lorries, and established their machine-gun nests quickly when the enemy came in sight.

But when the Japanese calmly avoided the guns, leaving them to be mopped up by dive-bombers or to be withdrawn, and outflanked our positions by agile infiltration through the jungle, we found ourselves at a loss. The positions we had established were not physically strong enough to stand for long. There was little concrete and trenches were too shallow or had not been dug at all.

A correspondent gave a good picture of the situation when he described how the defenders of Singapore Island were demoralised. "For three days," he said, "these men had been sitting amid all this uproar in shallow, open trenches in rubber and coconut plantations, just waiting for the stuff to fall."

Just waiting for the stuff to fall. . . . But what about anti-aircraft work? Well, I cannot say how company defences were exactly organised in Malaya. The normal arrangement of infantry battalions is like this. The battalions are divided into five companies, four of them consisting of riflemen. The fifth comprises the "specialists" and is subdivided into six platoons, one of which is called the Drums. Its duties are dual: the playing of drums for the battalion on the line of march, and the anti-aircraft defence of the unit. For the last-named job the men are equipped with Bren guns and special mountings from which they can be fired.

But supposing the A.-A. specialists, ridiculously sparse in proportion to general numbers, are separated from the rest by withdrawal or death?

What we must get into our heads, however, and what the Far Eastern campaigns have finally demonstrated, is that infantry must be as well-protected against air attack as against any other form of assault. The ideal is closely co-operating flights of fighters, combined with multifarious batteries of light A.-A. guns such as the Bofors, and the types which the Germans deploy in such profusion. But if that ideal cannot be immediately achieved, much can be done to change the organisation of infantry units in order to guard against air attack.

The more one studies the Far Eastern campaigns the more one realises that local commands have had no *positive* schemes of defence. Even the temporary digging of trenches and erection of strong-points has been impossible in many cases, so swiftly have defenders, lacking a plan of their own, been surrounded or pushed back. In Java last of all we have heard the same old story of the Allied troops streaming forward in their lorries down roads to meet the invaders, and then, like the cricketer who makes the mistake of thrusting his hand forward to meet the ball, missing the catch and being caught themselves. Even in the actual hand-to-hand fighting they have been continually at a disadvantage through wrong methods. When our men have cornered the Japanese with bayonets they have usually come off best, but invariably the invaders have avoided such clashes, preferring to enter the trees, encircle our men, then mow them down with hidden tommy-gun fire, or break their nerve with close-range mortar bombardment—a trick learnt from the Germans. Meanwhile, our own men have had few mortars of their own and fewer tommy-guns with which to reply.

All criticisms of these operations can, fortunately, be qualified by the thought that the Army has shown itself much more adaptable and ingenious in Libya. It is almost as if the total lack of cover in the desert impelled a more realistic attitude towards construction of trenches, redoubts and the like. Perhaps half the trouble in Malaya was reliance upon the country to provide what the troops themselves provided elsewhere—namely, stumbling-blocks to the enemy. Still, the fact that we can use our brains in one part of the world—and we know we have got the brains and the material—only throws into relief our mistakes in the Far East.

One other mistake in the style of our Far Eastern fighting may be noted in this quick survey—namely, our ridiculous reliance on water defences, especially exemplified by the fight for Singapore Island and the Malayan campaign. Right through history rivers and other narrow waterways have let down defensive-minded commanders who have put faith in them. Having a river in front of you is like having a Maginot Line; you unconsciously neglect basic defence measures, and, once the river is crossed, have to retreat very hurriedly or fall a quick victim. Yet in Malaya and Burma, in this age of aircraft and amphibian tanks and highly mobile bridging devices, we have crossed and taken up our flimsy positions behind river after river, until it has almost become a joke (but a joke that is hardly so funny to the wretched, mishandled men on the spot).

Indeed, it has not been, from the first, a question of *our* tactics and our style of fighting in the Far Eastern campaigns, but a simple matter of lack of tactics on our side and very good ones on the part of the enemy. Having tremendously wide areas to defend with inadequate forces, we could only have hoped to have succeeded by using those forces with supreme military skill, a quality that no commander on the spot has so far evinced.

We can agree that, thanks to the naval and air breakdown, our Malayan and then the Javanese forces were soon faced with overwhelming numbers of invaders. Would not a great General have made at least an attempt to erect a Tobruk somewhere, or, if Tobruk had the advantage of sea communications, a Bataan Peninsula? Penang Island, by its shape and position, could have been both a Tobruk and a Bataan. Fort Changi might have been another choice. Two or three such strong-points—and we might be fighting in Malaya still.

THE JAPANESE REHEARSED THEIR TACTICS FOR INVASION IN THE PACIFIC during their campaign in China

It is now generally believed that the invasion methods of the Japanese were carefully rehearsed a long time before war was declared against the United States and Britain. The U.S. War Department has summarised the methods as follows: landings are usually made just before dawn. When possible, periods of rain and stormy weather are chosen. Men are transferred from the transports to landing craft just off the landing beach, and the operations are covered by destroyers, cruisers or battleships. At a given signal, after a blistering barrage, fifty barges, each containing 150 men, start for the shore, where a foothold is soon gained. The infantry carry only a light equipment, in striking contrast to our own troops, who are usually encumbered with the heaviest material. The picture *below* should be compared with those at the bottom of this page, when the differences in ideas will at once become apparent. This contrast in weight of equipment is also discussed in Mr. Villiers' article

MODERN ARMIES MUST BE MOBILE: The Lessons We Must Learn from the Malayan and Libyan Campaigns

By E. J. VILLIERS

THE Japanese have rubbed in two lessons in Malaya and Java: first that the command of the sea is worth any cost, and secondly that troops must be agile and fast-moving, not overburdened with kit, and their weapons must be of the same mobile nature. Remedying our naval weakness in the Pacific will be a long-term job; but the second weakness, the immobility of our troops and their weapons, could be tackled right away.

The Japanese is an Asiatic army, and it is fighting on its own ground, where it has shown itself master of its *métier*. Some of our units opposed to them had fought in Norway, France, Libya and Syria, with practically the same equipment as they had in Malaya. Before long, they may be fighting in the Caucasus or Siberia; hence the impossibility of specialising too much either in their training or kit. But nothing has transpired to show that lightening the dead-weight load on the individual soldier and mobilising his weapons would be a disadvantage in any theatre of war.

A soldier is a fighting-man, not a porter. At present the action kit of a British infantryman weighs between 35 and 40 lb., of which less than half is accounted for by weapons and ammunition.

Not only is the total weight too great, but it is distributed badly. The centre of gravity of the load is too high, hampering the soldier in moving, and ruining his balance and foothold when hauling, climbing or leaping. The British Army carries the gas-mask on the chest, compelling the lung-muscles to lift an unnecessary 7 lb. weight with every breath taken. The pack is hung between the shoulder-blades, which is far too high.

The German Army took a lesson from the Norwegian mountaineers and their soldiers carry their loads in the small of their backs, slung on a frame like the Bergan rucksack, so that the load is properly distributed. The Japanese have taken the process one stage further, and suspend practically all their equipment from the waist, very little of it being above the hips. A soldier fights with his arms and shoulders, hence the importance of having this part of the body unencumbered. If we are to do much more fighting round the Equator, it will be essential to modernise our men's packs in this way, for the humid climate is sufficient of a handicap for a European soldier without imposing any avoidable burdens.

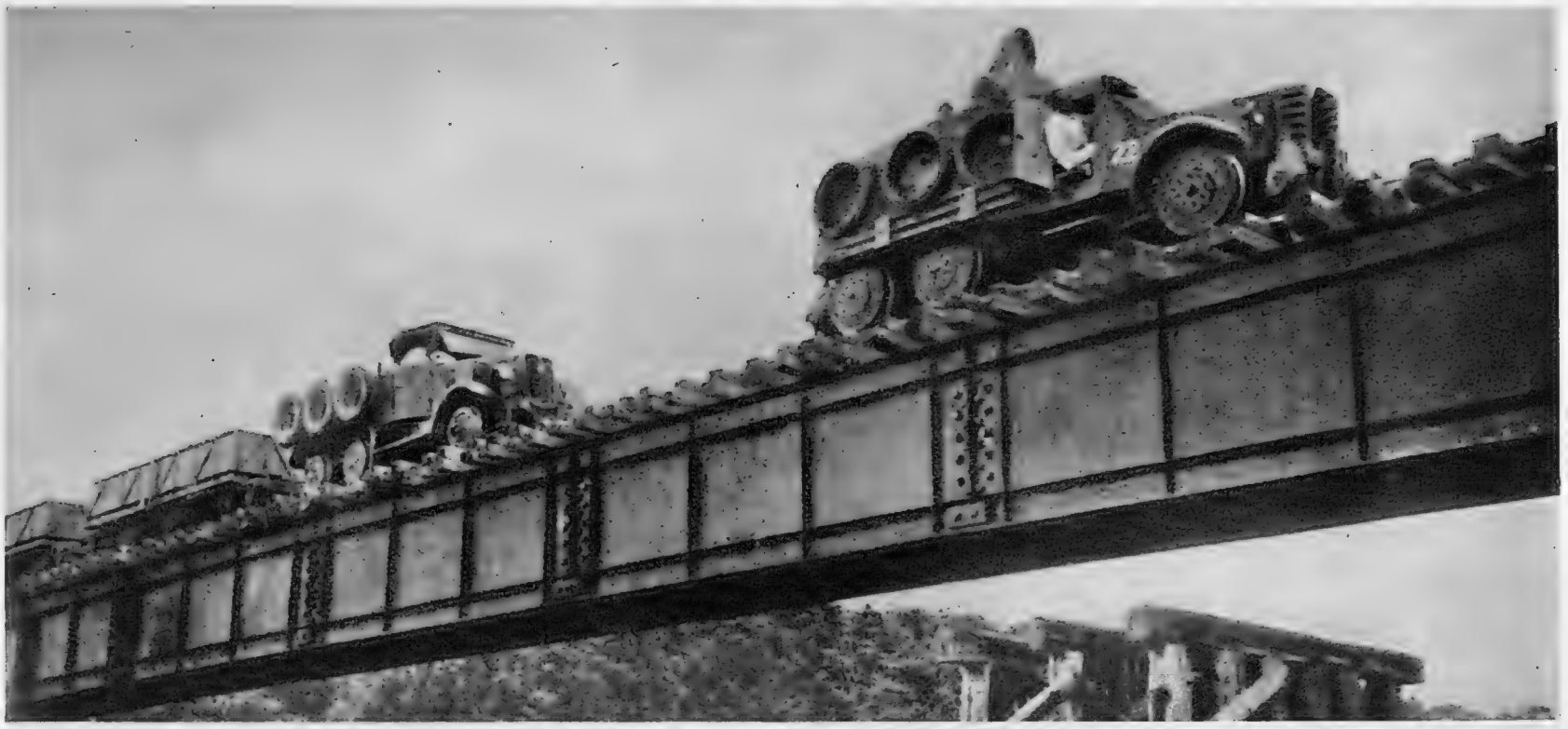
A Japanese soldier in Malaya, wearing a special protection against the malaria-bearing mosquito

As with the man, so with his weapons. England invented the rubber-tyred wheel, but we are still afraid to make full use of it in mobilising our guns. Only our smallest anti-tank guns are designed to be fired while mounted on their wheels; all the others have to be dismounted and man-handled into position. All this takes time, and delay in war means lost opportunities, so that tanks which could have been stopped escape to carry on their work. It has even been said that the Japanese often preferred to leave their own artillery behind in order to give their men the best chance of filtering through the jungle tracks so quickly that they often took our guns from the rear, and were occasionally

LANDING EXERCISES BY THE JAPS NEAR HANKOW: A picture which not only illustrates how landing tactics were rehearsed in preparation for the attacks on Malaya and Java and elsewhere, but also illustrates the lightness of the Jap infantryman's battle equipment

HOW BRITISH SOLDIERS OPERATED IN THE JUNGLE IN MALAYA, carrying a full pack and other heavy equipment, against the lightly-loaded Japanese infantry

"NOT ONLY IS THE TOTAL WEIGHT TOO GREAT, but it is distributed badly": So states Mr. Villiers in his article above, concerning the infantryman's pack. The pictures reproduced here and *on the left* show exactly the nature of the writer's criticism. Both pictures were taken in Malaya and both show the burdens with which British soldiers had to contend



JAPANESE ENTERPRISE AND IMPROVISATION DEMONSTRATED IN THE CAMPAIGN IN BURMA: How the enemy transports overcame, in daring manner, the "scorching" policy pursued by the defenders during their series of retreats through that country

Here is a bridge which had been destroyed by our soldiers: only one girder had been left in position. On to this, however, the Japanese placed railway lines—properly secured to cross railway sleepers: they then fitted railway wheels to their lorries, and were then able to haul laden wagons across the demolished bridge!

able in this way to turn our own guns against us. It is not only the Japanese who have shown us the advantages of mobility.

Rommel is said to owe a great deal of the success with which he resisted our last Libya attack to an impromptu brain-wave. He is said to have removed the turrets of some of his tanks and to have mounted light field-guns on them instead. This would give him a partly-armoured gun of very fair range, which could approach, fire and retreat almost without halting. No doubt Rommel has such guns, but one doubts very much if they are an impromptu effort. The Germans are known to have some quite heavy field-guns on six- or eight-wheeled chassis, and from wheels to caterpillar tracks is a very short and obvious step.

In passing it is not unfair to say that the last Libya campaign was a significant proof of the progress we have to make before our supply and repair organisations function with the speed and slickness! essential. Our advance started on November 18, 1941, after five months of preparation. Yet a little over eight weeks later, Rommel had been able to regroup and repair his forces so as to be able to take the initiative again, and by January 23 he had turned us out of Jedabieh and was on the way back to Benghazi.

We have already gone half-way towards the motorised gun-carriage. The Bren-gun carrier is an excellent, lightly-armoured mounting which is quite strong enough to mount at least a 75-mm. of the same type as the Germans use in their largest tanks. At present this handy little vehicle is very largely wasted in carrying so light a weapon as the Bren gun, however useful that may be in its own sphere. But given such a gun as that described and it would be a first-class addition to our fire-power, particularly as the infantry's own tank-stopper.

But we must not pin our faith too much to the caterpillar track, which is not so invulnerable as has been thought. The rubber-tyred wheel, in one or other of its many forms, is capable of standing much heavier loads than was at one time thought. Before this war is over, we shall probably think nothing of mounting some of our heaviest guns on them.

Nor should we forget the trench-mortar of the Stokes pattern. The Japanese have shown that this can be one of the most versatile weapons in the armoury, giving every platoon its own light artillery support. They appear to have at least three types, of roughly 2½-in., 3½-in. and 4½-in. calibres. The last-named is less common than the others, but it must be a very useful weapon, for by analogy with our own mortars, it must throw a shell or bomb of 20-lb. weight, containing as much explosive as our 18-pdr. shell of the last war, while it would be a much simpler weapon to transport and bring into action.

The smaller patterns appear to resemble our own very closely, but their army is rather more liberally supplied with them. They enable small forward parties of the Japanese to pepper the ground within a half-mile radius with an effective mixture of anti-personnel and H.E. bombs. In the jungle fighting they must have been of great value. Their high trajectory would be an advantage rather than otherwise; they would be easily concealed, and as easily moved out of harm's way.

A minor tactical surprise in Malaya was the use made of the bicycle. Quiet, and as fast as most tanks, their bicycles enabled small groups of Japs to filter through by remote tracks at surprising speed. The bicycle appears to have been a rather more useful weapon than the tank or armoured car in jungle warfare. Certainly the lightest types of tanks and armoured cars showed up best, though even these fell victims to the swamps in fair numbers whenever they had to leave the roads. Still, they undoubtedly served their purpose, and when conditions were against them, the Japanese were able to call on other weapons better suited to the job in hand. Tokyo thus reaped the advantage of fighting under conditions it understood and had prepared for. In the very nature of things, however, these advantages will decrease as the theatre of operations changes.

A gun mounted on wheels, for greater mobility, and captured by us during the Libyan campaign

An anti-tank gun, on rubber-tyred wheels, captured by South Africans of the Eighth Army in Libya

JAPAN HAS VAST RESERVES OF BICYCLES! And she has used them to the very greatest advantage in both Malaya and Java. This batch was in a shop in Yokohama, awaiting shipment to Indo-China. Armed with tommy-guns and riding silently on bicycles, the Jap infantry were able to penetrate silently for hundreds of miles through the Pacific jungles

A RED ARMY MINE-THROWER IN RUSSIA: The Japs have shown that mortars of this type can be very useful

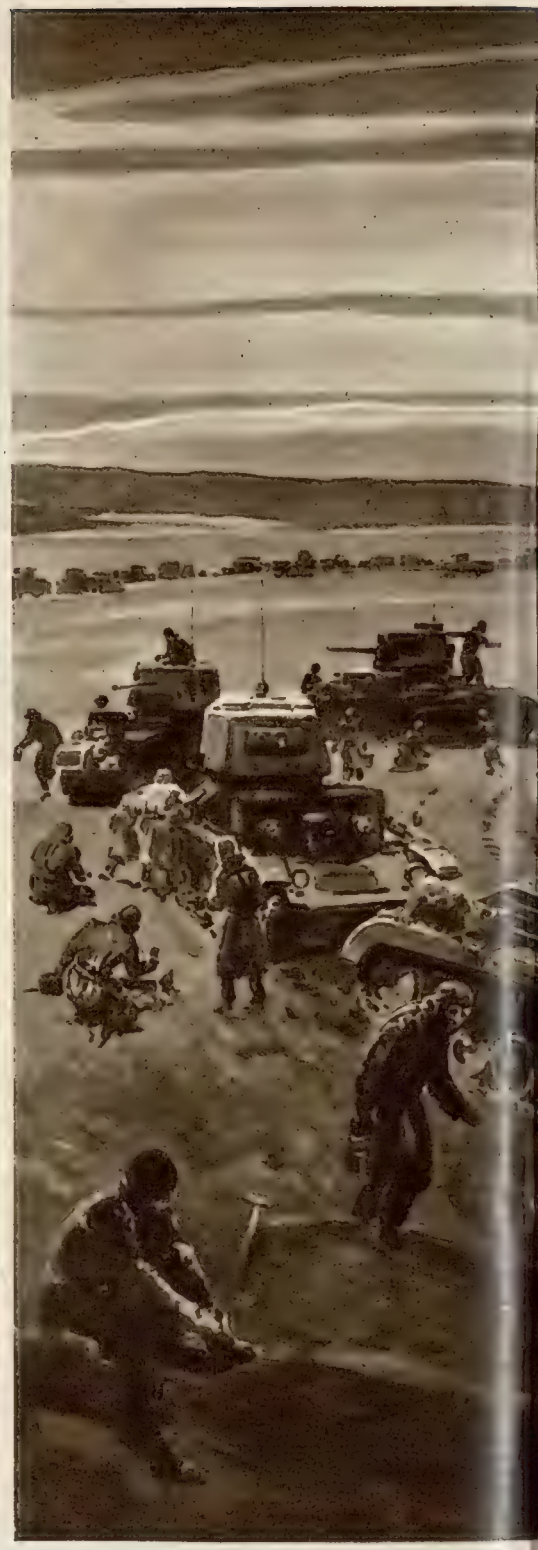
WHAT A JAP REGIMENT LOOKS LIKE ON THE MARCH: Not very impressive in appearance, perhaps, but very effective in operation!

CAMPAIGNING IN THE LIBYAN DESERT

THE EXPLOITS OF A BRITISH "WRECKING PATROL": A lorry party raids enemy aerodromes along the Gulf of Sirte and destroys ninety-one Axis planes in two weeks!

APPROACHING BY LORRY, THE "WRECKERS" THEN ATTACK ON FOOT: Bombs are placed in the aircraft and vital parts are ripped and smashed—*Drawings by Roland Davies*

In the desert around the Gulf of Sirte a special "wrecking patrol" has been at work recently. Driving by night, the lorries of the "wreckers" were hidden by day some miles from the enemy aerodrome singled out for attack. Then, at nightfall, the work began: all members of the party carried small time-bombs, which would be placed in the aircraft for explosion after the wreckers had left. In all, ninety-one Axis aircraft were destroyed in two weeks: but it was not all easy going! One of the two groups engaged suffered the loss of their lorries and supplies in an attack by Stuka dive-bombers; for eleven days they marched by night, distilling drinking-water from the sea. Eventually, they captured a lorry from the Germans; and all members of both groups returned to safety



"FROM LIBYA THERE IS LITTLE TO REPORT": For a good many days and weeks, this phrase has figured in the communiqués from the Middle East. The drawing above represents the situation summarised by this phrase. On the high ground to the west is the position of Rommel's forces, assumed on February 22, whilst to the east is the British line, taken up at about the same time: between lies No Man's Land, where patrol activity has been incessant—*Drawing by E. G. Lambert*

THE NIGHT LAAGER IN THE DESERT **A SCENE WHICH IS CONSTANTLY BEING ENACTED BY BRITISH ARMOURED FORCES OPERATING IN THE WESTERN DESERT.**
As dawn breaks, it can be seen that the ring of tanks remains, whilst the supply lorries move off for their appointed tasks—*Drawing by W. G. Whitaker*

GENERAL ROMMEL IN LIBYA : The German Commander is the seated figure on the left. Recently it has been reported that he has been in Berlin for " consultations." This picture was taken from an enemy prisoner. Note the device of the Afrika Korps on the side of the vehicle

THE drawing reproduced above has been made from a vivid description recently given in a letter home from a British officer serving with the Armoured Forces in the Western Desert. In this, the writer tells how at night the tanks are drawn up in " close laager, forming a protective screen round the lorries of the supply column : the tank crews fill up with petrol, water and ammunition, and draw their rations of bully beef and biscuits for the following day, before going to sleep on the ground beside their fighting vehicles.

" At the first sign of dawn the men are awakened, and file out into the bitter cold : everything is quickly stowed away, the engines begin to roar, and all is ready for immediate action —should such become necessary. The lorries which have been guarded within the protective ring of tanks now move off in the half light towards the back areas ; then the squadrons move off in line ahead in different directions ; and finally the troops and individual tanks.

" As soon as the light is strong enough, the order is given by radio to ' brew up.' The crews leap out of their tanks : one shovels sand into a tin, throws petrol on it and lights up. Another fills a dixie with water, and a third mashes bully and biscuits into a hash. The fourth is on wireless watch. This is breakfast, and it may be interrupted at any second.

" When breakfast is over, the tanks start to move off. . . . We travel fast and keep a good look-out. We have about five miles to go . . ."

NOT BOMBS, BUT PETROL TANKS : These are used as auxiliaries by Nazi aircraft. They were found abandoned at a Libyan landing ground captured by us

The UNITED STATES FLEET in the S.-W. PACIFIC

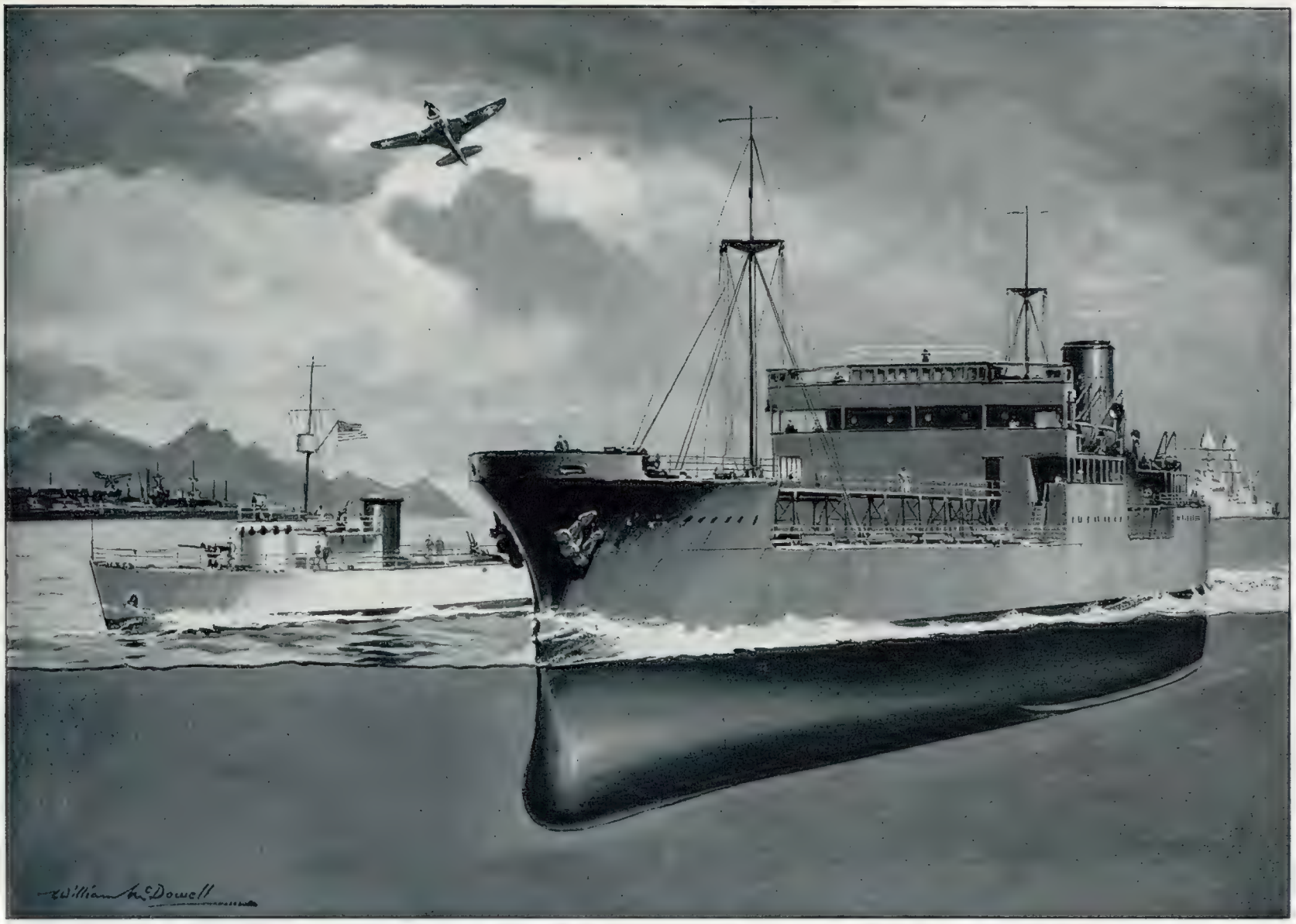
One of the answers to "What is the American Fleet Doing?"—*Special* Sphere *Drawings and Diagrams*

PART OF THE NAVAL FORCES OF THE UNITED STATES IN THE SOUTH-WEST PACIFIC ARE BASED ON NEW ZEALAND: At one time this area was considered a vulnerable one, but it lies considerably to the south of the Australian continent—in fact, south of the "Roaring Forties"—*Special* Sphere *Map*

Speculation as to where the American Fleet is at the present moment has been partly answered by the disclosure that certain of its forces are now based on New Zealand. This is the result of a despatch by the well-known U.S. war correspondent Mr. H. R. Knickerbocker, who recently described his own experiences in reaching that Antipodean spot. In the course of his narrative, Mr. Knickerbocker told how he reached New Zealand with the first American vessel to arrive in those waters: "After the attack on Pearl Harbour," he said, "I travelled by army transport to Honolulu under convoy. From there I went by aircraft-carrier across the mid-Pacific to a point two days' sailing from the American island group of Samoa. There I was transferred by breeches buoy to a destroyer, which put me down on the beach at the U.S. base of Pago-Pago." Mr. Knickerbocker goes on to describe how he progressed further on his journey to the Antipodes, and how U.S. war vessels have been operating in the South-West Pacific, under the command of Admiral Leary, the U.S. naval officer who was appointed to take charge of Anzac operations. In describing the course of probable future operations in this theatre of war, Mr. Knickerbocker has pointed out that published lists show that the United States have seven aircraft-carriers in commission: another eleven have been under order since 1940. Thus, in the long run, may be established that naval and air superiority which will defeat Japan and her Axis partners in the Far Eastern theatre of war

THE UNITED STATES GUARDS HER NORTH-WEST COASTLINE: Here is one end of a submarine trap, set at the entrance to a strategic waterway on the coast of the American continent. The buoys seen here support the net barring the passage to enemy U-boats: in the foreground is the Gate Vessel, which permits the passage only of bona-fide craft

THE BULBOUS BOW OF THE MODERN U.S. TANKER: The "E. W. Sinclair," launched at the Kearny Yard. (For a note on this type of vessel, see the letterpress beneath the drawing in the upper right hand)



A UNITED STATES TANKER, most precious of all Fleet Auxiliaries in the Pacific war, leaves a Fleet Rendezvous escorted by a submarine chaser. This tanker is one of the latest of ten such vessels added to the fleet of U.S. fuel-carriers operating in American coastal waters—*Drawing by Wm. McDowell*

The form of the fore end of the new American tankers is very interesting. Above the water-line the bows flare forward and outward, whilst the forecastle head is semi-circular. This is the latest modification of the now generally adopted "soft-nosed" stem. It has many advantages, the chief of which is that it can act as a buffer in the event of collision; the forward-reaching part taking the impact and thus confining possible damage to the part of the hull above the water-line. A ship with such a "forward-reaching" stem has actually come into harbour under her own steam after having run bow on into a dock wall. Her bows were crumpled for at least ten feet, but the shock had been taken wholly *above* the water-line, and the vessel was not even leaking! Another advantage is that, being fabricated of steel plating instead of a forging, it can be repaired more rapidly. Finally, the shape not only keeps the forecastle deck drier in heavy weather, but provides more working space for the anchor gear and windlass. The "bulbous bow" below the water-line is the modern idea of streamlining as applied to a ship's hull. It emanated originally from the Continental school of thought in naval architecture, and first came into prominence in the *Normandie*, *Bremen* and other large vessels. It suggests that these new U.S. tankers are fast! The submarine-chaser in the above picture is one of the latest American types. No details of her speed and armament have as yet been divulged

A DRAMATIC INCIDENT IN THE NAVAL WAR IN THE SOUTH-WEST PACIFIC: A U.S. aircraft-carrier, in the midst of a sudden storm, risks detection by using her searchlight as a burning beacon to assist a missing plane—*Drawing by Wm. McDowell*

During the operations of the U.S. Navy in the Pacific, an American aircraft-carrier flew off a number of aeroplanes to scout for enemy ships. All returned—with the exception of one. As the aircraft-carrier waited a storm arose: a message was received by radio that the pilot had only 20 gallons of petrol left. Those were his last words. "The storm was upon us," runs the published account. "Suddenly our hearts beat faster as a light appeared on our masthead. The great beam from our searchlight stabbed the sky. Our skipper was defying the Japanese and stretching out this helping hand to the lost pilot. But it did no good Somewhere, out in the vast Pacific, he stayed alone. . . ."

A U.S. AIRCRAFT-CARRIER AT SEA

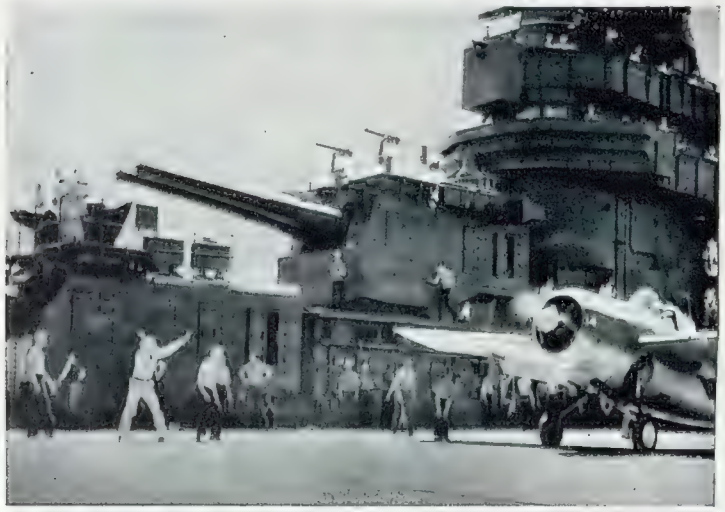
The First Major Engagement Between an American Fleet at Sea and an Attacking Japanese Air Force

THE official announcement of the first major engagement between an American fleet at sea and an attacking air force was recently made by the U.S. Navy Department in Washington. In this engagement, in which pilots from an American aircraft-carrier flew through a hail of anti-aircraft shells from their own ships, no fewer than sixteen out of eighteen Jap planes were shot down, and not a ship was hit. In addition, eye-witness reports would seem to indicate that two four-engined patrol planes, scouting for the bombers, ended in the sea, and probably another bomber was destroyed. It is thought that only one Jap plane got back to its base.

"Our fighters went after those Jap planes through the hail of our own anti-aircraft fire," says one report. "One of them went from kill to kill until he had shot down six.

"Eighteen two-motored Mitsubishi 96 bombers, believed to be one of the types which attacked the *Prince of Wales*, attacked us in two waves. From start to finish the engagement lasted only about two hours. Our ships, from aircraft-carrier to destroyers, were twisting and dodging and swerving for all they were worth, while the fighters fought off the bombers.

"The first aircraft came over in a formation of nine planes. Before they had got anywhere near, our fighters had shot down two.



GETTING A FIGHTER OFF THE DECK OF AN AMERICAN AIRCRAFT-CARRIER: The signal officer has just given the "go" sign to the pilot. American routine in the control of the flight-deck is different from that followed in the Royal Navy

One after another they dived and plunged into the sea. The remaining three Jap pilots broke formation, jettisoned their bombs and fled.

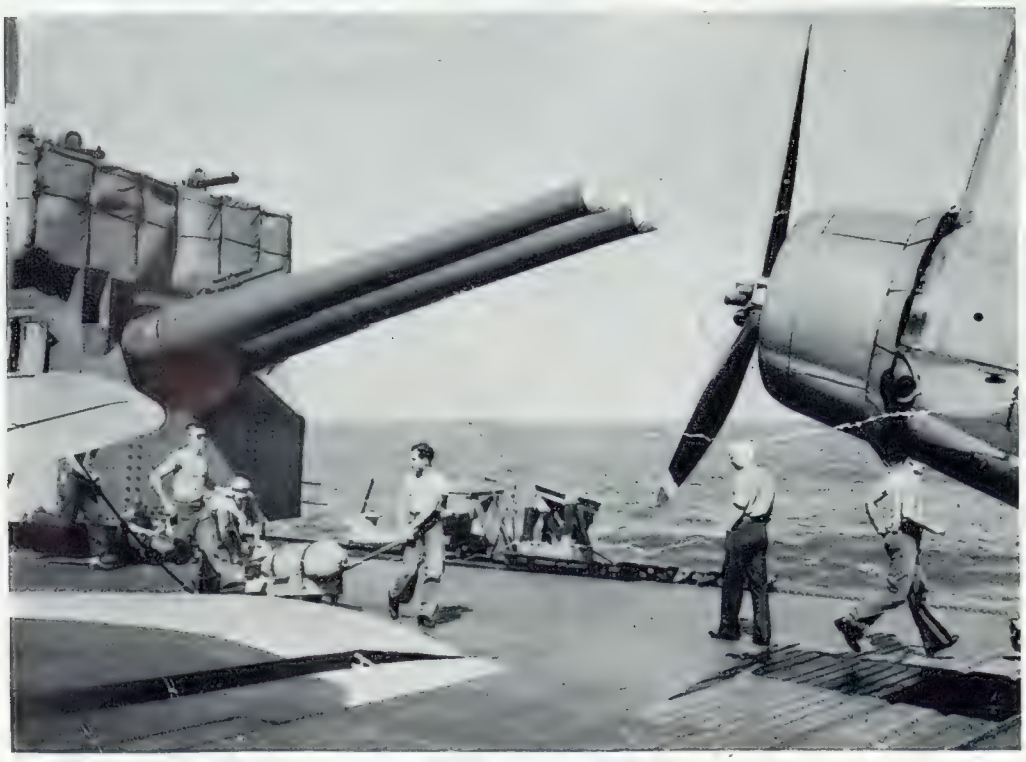
"Fifteen minutes later the second wave of planes came in to attack, again in formation, but at 10,000 ft. They too were forced to break and flee. A.A. guns shot down three of them, and the fighters four. The fighters chased the other five, and got three and probably four. Only the Japs know whether the last plane got home safely. The remaining seven practically performed mass suicide. They approached one cruiser at about 8,000 ft. in close formation, and 5-in. A.A. guns roared off at them while they were thousands of yards away. At the same time the fighters began to dart in and out among them.

"The terrific intensity of the anti-aircraft fire increased as the Japs approached. We could watch the pilots desperately trying to maintain their tight formation to protect themselves from the fighters."

Had such support from the air been forthcoming when the *Prince of Wales* and *Repulse* were attacked, what a different story might have resulted!

In the drawing by Mr. Dawson on the right, the aircraft-carrier depicted is the *Yorktown*, which is the same type as the *Enterprise* and the recently commissioned *Hornet*.

SIXTEEN OUT OF EIGHTEEN JAPANESE PLANES SHOT DOWN
Japanese, when a U.S.

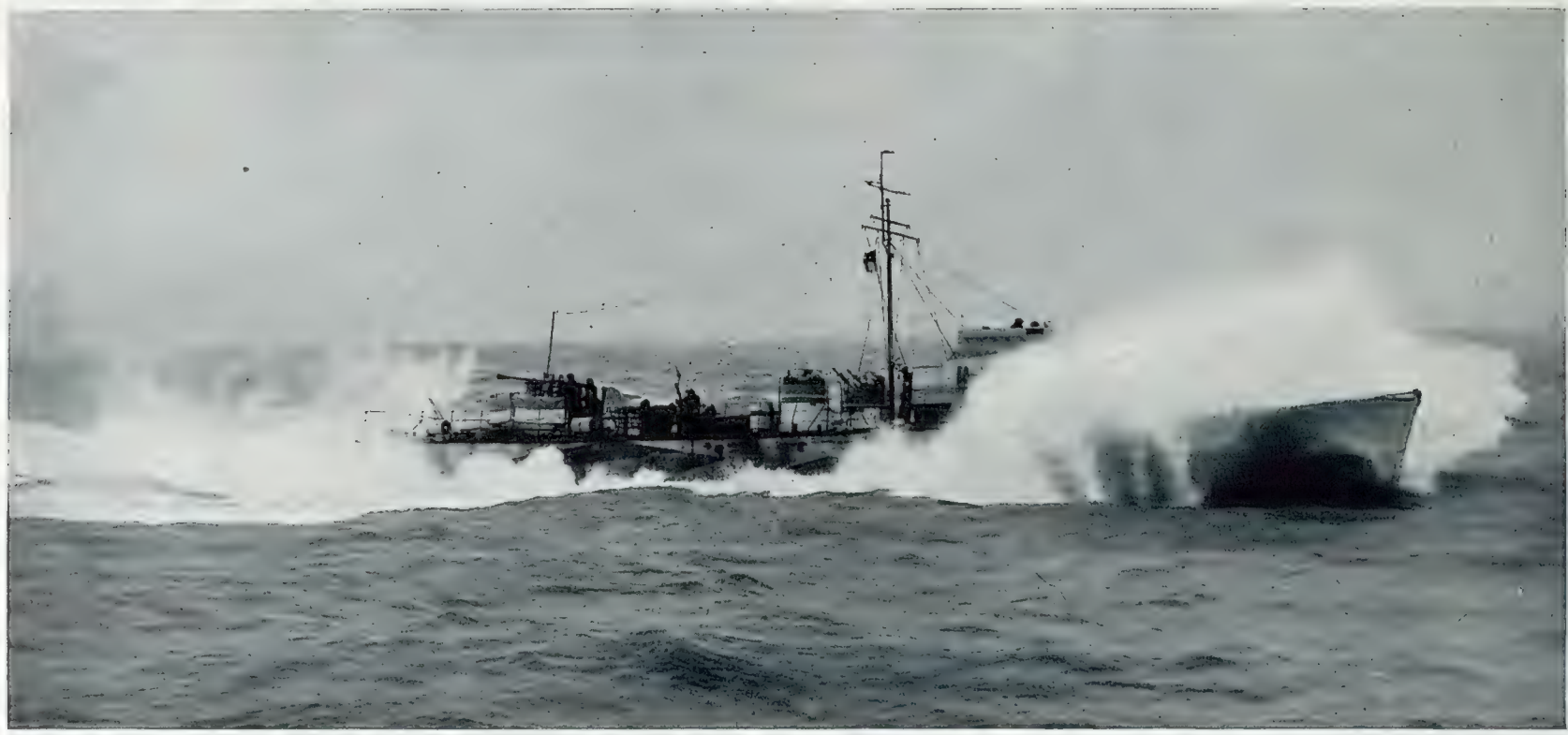


The pictures reproduced to left and right were taken aboard an American aircraft-carrier during a recent offensive patrol in the Pacific Ocean. Both have just been released for publication by the U.S. Navy Department in Washington. The one on the left shows the rearming of a bombing plane on the flight-deck: both depth-charges and bombs were carried, and patrols were maintained in an effort to locate the enemy — but without success. On the right the aircraft-carrier's two forward batteries are discharging a salvo at a target being towed several thousand yards away. While the Fleet was searching for Axis surface and under-water craft, these guns were manned for 24 hours a day: failing real enemy objectives, marksmanship was kept at a peak in this manner

N-AND NOT AN AMERICAN SHIP HIT! An impression of the first big engagement in which an American aircraft-carrier has been involved in action against the ial squadron flown from the carrier's deck achieved a brilliant victory over the enemy air attackers—*Drawing by Montague Dawson*

FROM THE NORTH ATLANTIC COMES THIS PICTURE OF A "SEAPLANE TENDER": This is a vessel operated by the U.S. Atlantic Air patrol, for the servicing of the seaplanes employed on ocean Convoy duties and on reconnaissance. It is a type which appears to be exclusive to the U.S. Navy. A Catalina aircraft is on the vessel's stern-deck, and another is being hoisted aboard for overhaul. The picture was taken at the secret base on the American coast from which the Atlantic Air patrol operates

THE M.L.'S OF "E-BOAT ALLEY"



BRITAIN'S FAST AND POWERFUL MOTOR-LAUNCHES USED FOR ESCORT AND PATROL DUTIES AROUND THE COAST: This type is our equivalent of the German E-boat, but it is a much harder hitter in action and much sturdier in a heavy sea. Its speed is colossal and its armament really powerful: none but the tough can operate such craft! One of their happy hunting-grounds is the notorious "E-Boat Alley" off the East Coast

THE GUNNER AND HIS TURRET BEHIND THE BRIDGE: There are two such turrets on the after deck, one on each side. Each gunner operates two anti-aircraft machine-guns, and these can be swung into any position. The turrets are very compact and most ingenious in design

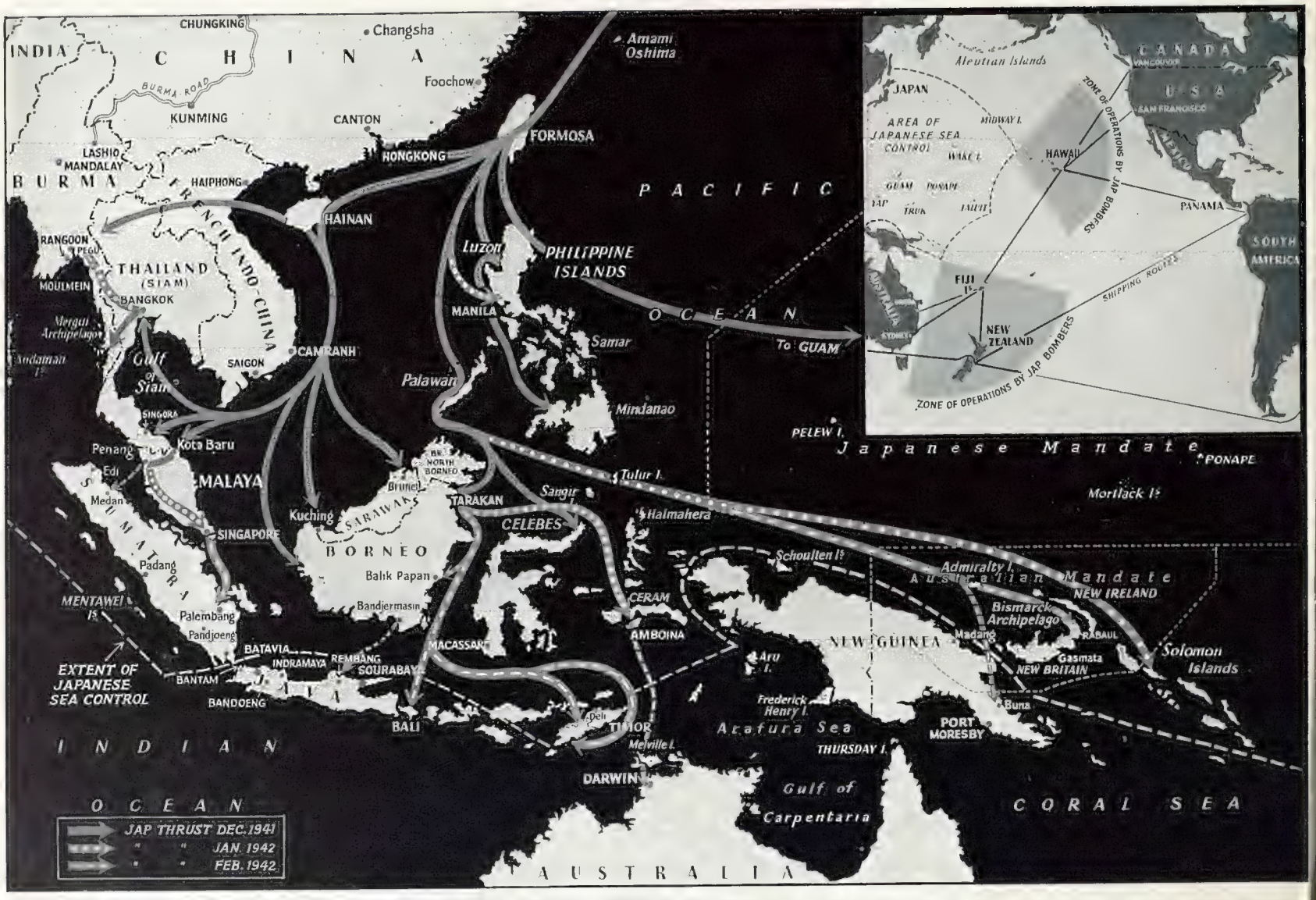
The E-boat is short for "Enemy Boat"; its happy hunting-ground is "E-Boat Alley," which lies off the East Coast of Britain; its chief foe is the M.L. of the type illustrated on these pages. This speedy, compact craft is a destroyer in miniature, some of which have already carried out notable work against their German counterparts. Usually officered by sub-lieutenants of the R.N.V.R., the M.L.s are manned by young and enthusiastic crews inured to hardships and the buffetings which 40 knots in rough seas can impart! An M.L. "flat out" is no place for weaklings; and even the brawn often have to wear body-belts, like racing drivers, to guard their ribs! Packed on board these miniature craft is a deadly armament of machine-guns, anti-aircraft guns, depth-charges, and other warlike implements The principal duties of the M.L.s are coastal patrols and escort work; but some of them have operated as far as the Dutch and German coasts. The pictures reproduced here were taken during the course of a cruise in "E-Boat Alley"

THE SKIPPER (on right) is a former Oxford Blue and Rugby International (he was capped five times): With him is his 1st Officer in the M.L.'s miniature Ward Room

A GAME OF CARDS in the miniature Mess Deck of an M.L. These craft are a model of ingenuity in space-saving!

GOING FLAT-OUT IN A ROLLING SEA: EACH MAN IS AT HIS STATION AND READY FOR INSTANT ACTION. The crew of these flying M.L.s are specially picked, and the Skipper is usually an ex-yachtsman Sub-Lieutenant of the R.N.V.R. Note the complete offensive armament (which includes depth-charges) exhibited in the above picture

THIS PICTURE WAS ACTUALLY TAKEN IN THE NOTORIOUS "E-BOAT ALLEY" off the East Coast, where caution—and promptitude—are essential! Within a very limited space the armament is truly remarkable. Owing to their great speed and general handiness, the M.L.s can keep constant watch over the Convoys



The CONQUEST of the PACIFIC

With the Capture of Java, the Japs are now Masters of the whole South-West Ocean

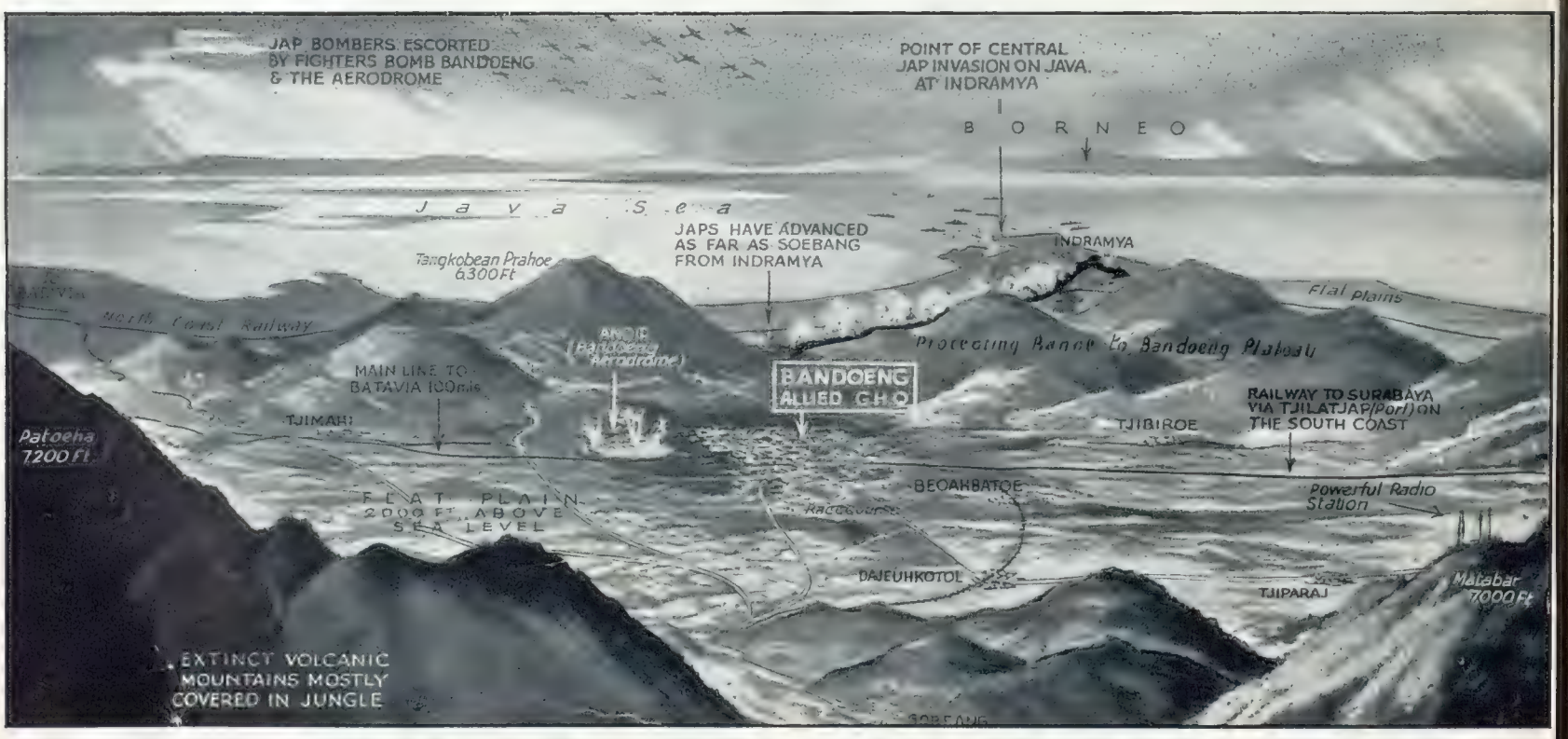
This conquest has been achieved within the incredibly short space of three months!

THREE MONTHS OF NON-STOP OFFENSIVE BY JAPAN, on land, by sea and in the air—and what it has achieved for the attackers month by month (*see key in bottom left-hand corner*). **The map inset on the right also shows how the New Zealand and the Hawaiian group of islands come within the zone of operations by Jap bombers working from Pacific Ocean bases**—*A Special Sphere Map*

DECEMBER 1941—The Japanese attack began with the treachery at Pearl Harbour. Then followed the loss of the two British capital ships off Malaya, the fall of Hong Kong, the attack on Luzon in the Philippines, and the rapid advance of the Japanese down the Malay Peninsula. Then the Japanese attack spread—by air—to Sumatra, Celebes and New Guinea

JANUARY 1942—This was ushered in with a determined Japanese onslaught on the Batan Peninsula, and a continuous advance down the Malay Peninsula, with no serious pause at any point. All the Allied aerodromes in Malaya were captured during this advance. The first of the Jap units reached the Strait of Johore as the month closed

FEBRUARY 1942—The Japanese push into Burma progressed materially; another thrust developed in the Macassar-Celebes region. Singapore surrendered on the 15th; and the first attacks on Java began. Australia received its first bombs on Darwin; and the Burma Railway was cut at Pegu. At the end of the month the enemy was closing in on Java



THE JAPANESE ADVANCE TOWARDS BANDOENG, in the high ground of the Central Plain: this was for a time the Headquarters of the Allies in Java: In the background is Indramya, where the Japanese landings took place—*Drawing by E. G. Lambert*

The land invasion by the Japanese on the northern coast of Java was preceded by the customary attacks from the air during the middle of February. Batavia, Surabaya and Bandoeng were all subjected to heavy assault, sometimes forty machines appearing at the one time. The streets of Bandoeng were machine-gunned and, at the same time, Dutch aerodromes were sought out for special attention. As Dutch fighter escorts diminished in strength, the enemy were able to catch some of the big American bombers on the ground, emphasising the necessity once again of an adequate system of warning. A desperate attempt was made by the Allied naval forces to cripple the Japanese transports at sea, but this was not effective enough to stay landings at three points—east, central and west. Batavia and Surabaya fell, and Japanese forces occupied large portions of the great Java plain, which runs for 600 miles along the northern section of the island and extends some 35 miles inland from the sea coast. The Japanese forces pushed on across the plain to the high ground around Bandoeng, which was for a time the Dutch and Allied G.H.Q. The whole of the district around Bandoeng and Buitenzorg is studded with cones, some active, others long extinct. Fighting took place around the bases of some of these volcanic craters. By the 7th of the month the outer ring of Bandoeng's defences had been broken through, and the Javanese wireless went off the air with the dramatic message: "Good-bye till better times. Long live the Queen!" Other telegraphic communication ceased at the same time, and the island then came completely under the control of the Japanese.

SURABAYA, CHIEF NAVAL BASE AND AIR STATION OF THE DUTCH EAST INDIES, which has fallen to the Japanese in Java. Doubtless this will now be used by the enemy for further operations against the Allies in the South-West Pacific—*Drawing by E. G. Lambert*

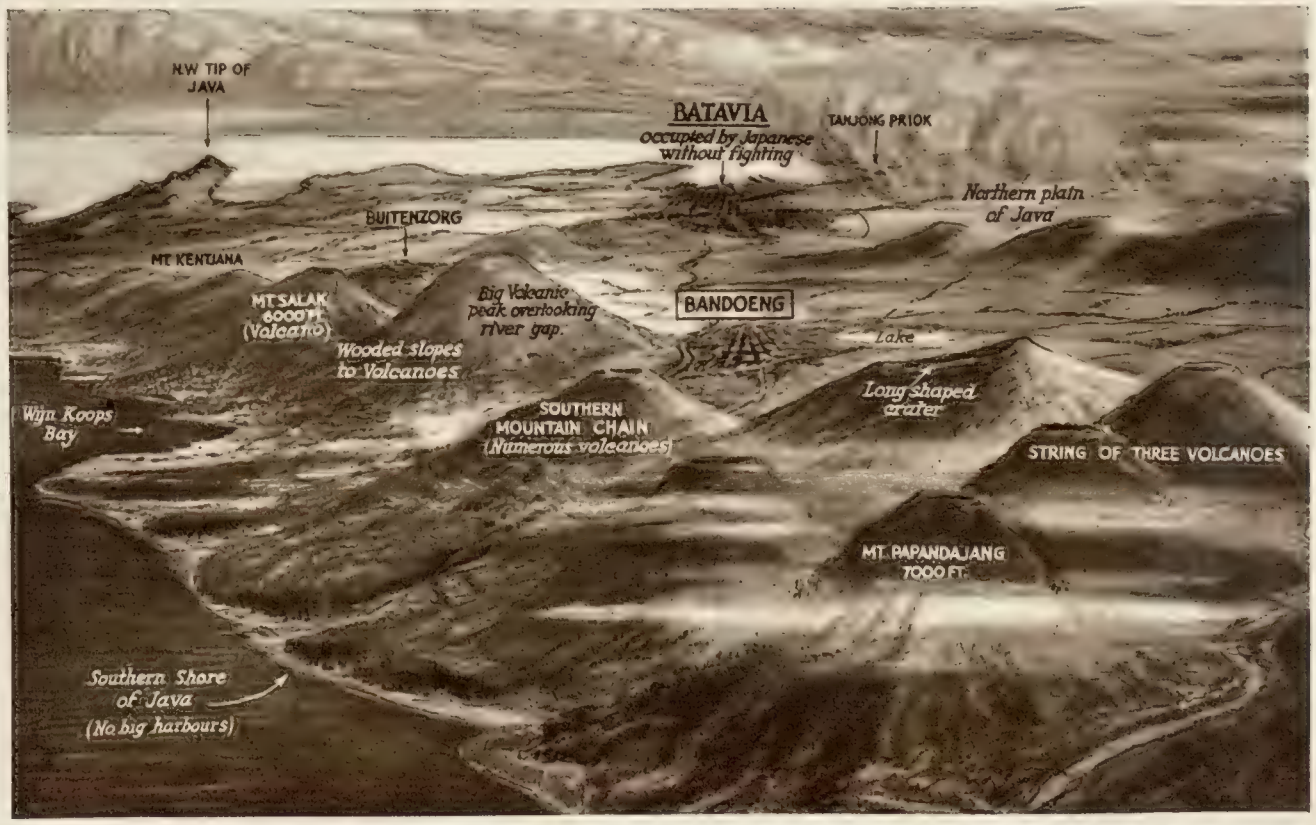
THE ISLAND OF JAVA, and the position of Tjilatjap on the south coast, "the only road of retreat which was left open to the Dutch troops and to the small formations of British and U.S. soldiers"

Surabaya was the object of repeated attacks from the air during the month of February; the Dutch Air Force used every endeavour to counter these blows, but suffered considerable losses while inflicting casualties on the enemy. Surabaya was one of the best-armed positions in the Dutch scheme of defence, but the numerical superiority of the enemy eventually bore down the spirited work of the local air forces. The Japanese occupied the island of Madura, which in normal times sheltered the town and base at Surabaya, and succeeded in landing a big force to the west of the base. As the enemy troops advanced eastwards, the Dutch authorities destroyed various installations which might have proved of use to the enemy. The town suffered considerably during the attacks from the air, some of which were directed against the centre of the town. It was considered by the Dutch Command that the attacking aircraft must in some cases have come from an aircraft-carrier at Amboina; the Celebes aerodromes in the occupation of the enemy were too distant for the Dutch fighter planes to carry the offensive to the enemy. Considerable fighting took place in the Surabaya area during the opening twelve days of the month and some uncertainty existed as to the fate of the base; on the eleventh of the month, however, the Japanese claimed to have entered it

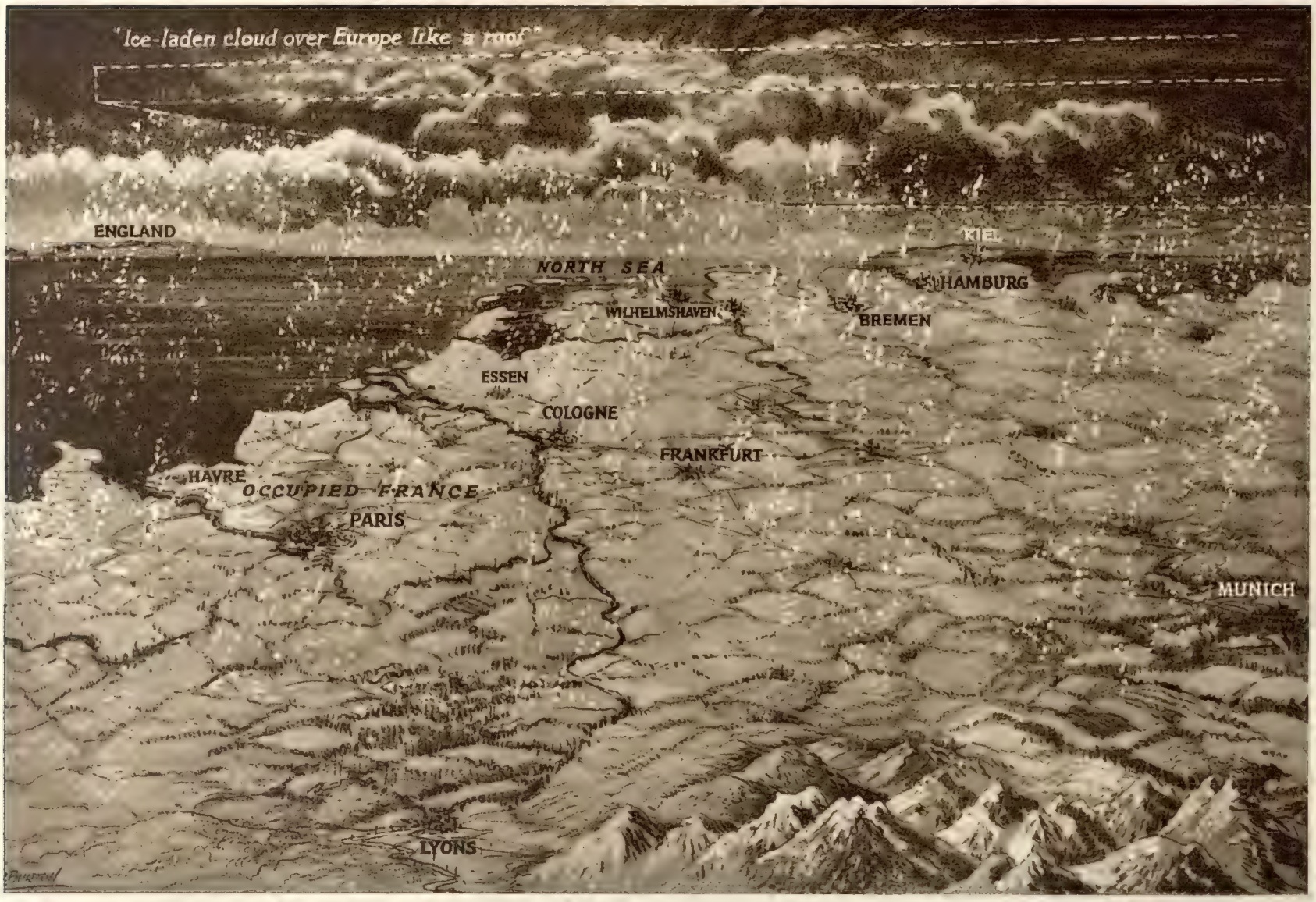
Now that it is all over, and the enemy is in occupation of the island of Java, it can be stated that the Allied Navies did their utmost to check the invasion: owing to the losses amongst British, Dutch and American warships, however, another crippling blow was struck to Allied Sea Power in the Far East. Japanese command of the sea in the South-West Pacific meant that offensive power in that area had passed from our hands.

Java is an island about four times as big as Holland itself, and it has a population of more than 48,000,000. All reinforcements in bulk for the island had to be transported by sea—and the command of all the surrounding seas rested in enemy hands, as well as the aerodromes on the surrounding islands which might have been used for the strengthening of the defenders' fighter force.

It was therefore a desperate struggle which the Dutch put up. With its dense population, its vast plains, good motor roads and railway tracks, Java is not a country where Nature offers many possibilities to the defenders against vastly superior forces. The plain of Bandoeng is certainly encircled by mountains, but these were not insurmountable to the swarms of the Japanese Army which were landed on Java's shores from hundreds of transports



ONE OF THE STRANGEST PLACES IN THE WORLD: The south and west portion of Java, in the district of Bandoeng, where the fighting took place which resulted in the capture of this part of the island. The whole of this region is studded with volcanic peaks rising almost straight out of the plain—*Drawing by Percy Home*



THE "THICK CANOPY OF ICE-LADEN CLOUD" which has hung over N.-W. Europe during the winter and hindered our bombing effort—*Drawing by H. P. Burton*

In his recent survey of the air position, in the House of Commons, Sir Archibald Sinclair made reference to the weather conditions over Europe during recent months as one of the reasons for the abstention of our bombing of the heart of Germany. "Since October, the weather has been the worst for air operations—with the exception of 1937—for 15 years," he said. In a previous reference (at Bristol on February 28) the Air Minister had made a similar statement, when he added that "this winter we had hoped to hit Germany hard, but our airmen have been confronted by even a more formidable enemy than the Germans—the weather. . . . When the cycle changes, Bomber Command will be ready to carry into Germany destruction on a far greater scale than your own beautiful city suffered a year ago." Over a very wide area of Europe, in fact, throughout the whole winter, "ice-laden cloud has lain like a roof." And, over our home aerodromes, such conditions have often been made the worse owing to fog!

The CHANGED ROLE of the "LUFTWAFFE"

Heavy Reverses and Losses Over Britain and Russia have Weakened that Once Mighty Striking Arm. In the Spring the Effect of these Reverses will Begin to Tell More and More

ON the night of May 10 last year the *Luftwaffe* staged its most spectacular after-dark attack on this country. Hundreds of bombers for hours on end roared over London, dropping their lethal cargoes upon the homes and shrines of the "blitz"-toughened citizens. It was a bold attempt to bring the wounded city to her knees, to break finally the morale of the stout-hearted Londoners; but it failed.

That night *radiolocation*, A.-A. defences, and night-fighters jointly accounted for an official thirty-three enemy planes brought down. It is reasonably certain that others, badly damaged by the strengthened and augmented defences, did not reach their home bases, and it is generally supposed that the German attacking force lost as much as 10 per cent. of its planes and personnel.

Following upon the signal defeat inflicted upon it in the Battle of Britain, this scale of punishment was greater than the *Luftwaffe* could withstand and still retain the night operational ferocity of the preceding winter months. An attack upon a similar scale was not repeated, mainly for two reasons.

First, the German High Command had certainly seen the red light. Throughout the months of ceaseless "blitzing" the dogged British defence had slowly but very surely attained an efficiency which promised an even greater percentage of losses if the mass night-raids policy was maintained, and promised, further, the possibility of the *Luftwaffe's* crews' own morale cracking. That morale had to be kept high because of the second reason, which was—the autumn offensive against Soviet Russia.

For the attack on Russia—little more than six weeks away on May 10—the *Luftwaffe* would require its best men and machines if the rapid campaign schedule was to be kept. In short, the drive eastwards was to be a sequel to the drive westwards of a year before. The *Luftwaffe* would forget the miserable and inglorious ending to the Battle of Britain in the glorious achievement of the Battle of Russia.

But while the main strength of the *Luftwaffe* was to be hurled against a 1,500-mile front, picked squadrons were to be retained in the West to undertake two important tasks.

One, to tighten the sea-air blockade circle about the British coasts, by reconnoitring and raiding the coastal areas, harbours and estuaries, by making very necessary meteorological surveys, by spotting for U-boats, and by delivering raids on convoys and an occasional nuisance raid on the mainland which could be featured in the German Home Press.

Two, to provide fighter protection for the occupied Channel coasts and North Sea territories against any new offensive measures adopted by the expanding R.A.F. or the other two British Services.

The German High Command, in effect, had arrived at the crucial point of the war, the point where it had to stake much on a gamble—perhaps more than it could afford to lose, as history will one day show.

In the first place, it was gambling on a military ability to smash the Russians back beyond Moscow before the winter snows clogged the steel tracks of its Panzer divisions. In the next, it was taking a long chance on British production not reaching a peak sufficient to stand the strain of any freshly-opened second front.

To understand this clearly, one must appreciate that the *Luftwaffe's* bombing operations are never separate military entities, as it were. It is not, and never has been, the policy of the High Command to use the *Luftwaffe* for bombing

NEWEST FIGHTER OF THE R.A.F.—a striking picture of the twin-engined Whirlwind: In last week's issue we published drawings of this single-seat monoplane fighter now operating with the R.A.F. Here is an actual picture of the same aircraft in flight. It is fitted with two Rolls-Royce "Peregrine" engines, each of 850 h.p.: its armament consists of four 20-mm. cannon mounted in the nose. The span is 45 ft., and the length 32 ft. 3 in. An interesting feature is the tail unit, the tail planes being placed well above the line of the fuselage and set in the high fin towards its upper extremity. The range of this fighter was indicated by an announcement in August last that Whirlwinds had formed part of the escort to the bomber force as far as Antwerp during the great daylight raid on Cologne

offensives separate from and entirely unrelated to wider military strategy.

Accordingly, in the weeks and months following upon the tearing-up of the pact of non-aggression with Soviet Russia, the *Luftwaffe's* offensive against the British mainland appeared to dwindle, despite the fact that, before the coming of winter, two entirely new types of planes—as distinct from developments of existing types—were put into operation. These were the new twin-engined Dornier 217 bomber and the Focke-Wulf 190 fighter. Neither proved a match for improved R.A.F. types. Nor did the Russian campaign go according to plan.

The High Command had to take serious stock of its position, especially as it concerned the *Luftwaffe*.

In January of this year expert opinion estimated that, largely due to the reverses of the Russian campaign, the *Luftwaffe* for at least three months would be unable to launch air attacks against Britain of more than fifty bombers for any single objective. Further, it would be unable to maintain such an offensive for any appreciable length of time.

ABOVE THE CLOUDS: A flight of Stirling bombers, largest four-engined bombing planes in the world. These aircraft (with others almost as big) will form the spearhead of our coming offensive in the air against Germany

In the six months from June to January the *Luftwaffe* probably lost a minimum of 8,000 machines on the Eastern Front, and by the New Year probably a full third of the *Luftwaffe's* front-line strength was flying east. Only a fifth of its strength remained in the West, including some 500 fighters retained to deal with the R.A.F.'s newly-developed offensive. Something more than a seventh of the *Luftwaffe's* strength was in the Mediterranean theatre, while the remainder—roughly a third of the whole—was home in Germany, badly mauled, being re-engined and refitted.

All of which means the *Luftwaffe* was in no fit condition to renew the earlier "blitzing" of Britain on the same large scale, even had the High Command so desired. It was stretched to its limit by the demands upon it on all fronts. Its offensive against Britain gradually assumed a routine aspect. Occasionally night-raiders—never many—appeared over Merseyside or a north-east district, or somewhere in the south-west. A few bombs were dropped. In short, the work of day reconnaissance planes was not allowed to be completely wasted. The German public at home were told frequently and at length how the bombarding of British military objectives was continuing. But with the coming of severer winter conditions even these desultory raids became less frequent. As the Secretary of State for Air has disclosed recently, for a considerable period over North-West Europe has hung a thick canopy of ice-laden cloud. The *Luftwaffe*, with strict orders to watch our East Coast, has come over in small numbers at night, only to find that our night-fighters and ground defences have not slackened their vigil.

It has been a hard winter for the *Luftwaffe*, with every prospect of a harder spring to follow.

But already the *Luftwaffe* can measure the extent of another defeat in the campaign against Britain. During the past winter it has not effectively tightened the blockade, nor has it seriously interfered with the despatch of war supplies from these islands to our Russian ally. Neither has it dealt a smashing blow at our mounting war production, nor altered in any way the spirit and resolution of the people. The Atlantic convoys come and go, the Renault Works are smashed, British paratroops score a notable success at Bruneval. For purely propaganda purposes, in reply, the *Luftwaffe* sends fighters by day over our South Coast and at night drops a few bombs on our coastal countryside.

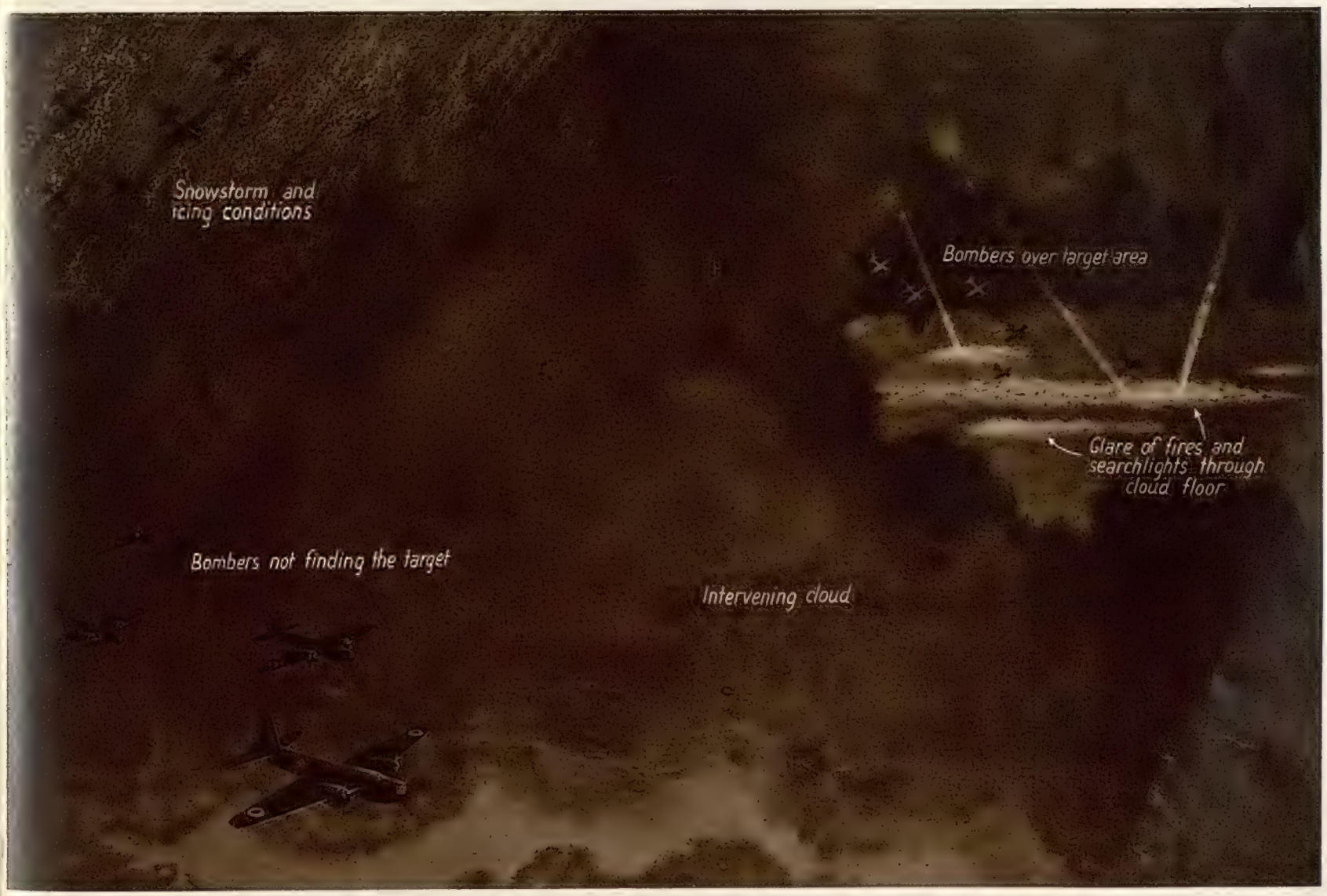
No one is fooled, least of all the German High Command, who fully understand the changed role the *Luftwaffe* has been forced to play in the air war.

The absence of German bombers in force over Britain is explained glibly over the German radio by a so-called expert who strangely discovers that night-bombing is an unsure policy, never likely to pay high dividends.

The real truth, of course, is kept from the German people. The *Luftwaffe*, bearing in mind its wide commitments on all fronts on which the German Army and Navy are engaged, has not only a troublesome shortage of first-line machines, but a very serious shortage of first-class crews.

It is impossible for the *Luftwaffe* to revert to its former role until a good supply of skilled crews is forthcoming. In a few weeks now we shall know whether they are.

Leonard R. Gribble



FAILING TO FIND THE TARGET OWING TO BAD WEATHER CONDITIONS: An impression of a pilot's difficulties when raiding by night—*Drawing by L. Ashwell Wood*

In dirty weather over Germany only a portion of our bombers have sometimes been able to get through to the target, despite the best efforts of the navigators. In bombing operations, heavy cloud, icing conditions, local fog and electrical storms have all played their part in preventing pilots from getting over the target: but an increasing number are now getting through despite even these great difficulties. When taking part in a big raid, sometimes the glow from previous fires, or the glare of searchlights through the clouds, will indicate the presence of the city under attack. Above, and beyond, these may be heavy snowfalls and strong winds—and generally unpleasant conditions, with abnormally low temperatures

THE OUTLOOK FOR THE BRITISH SPORTSMAN

Practically Every Sport and Popular Game—Indoor as well as Outdoor—is now being Affected by Wartime Restrictions and Shortages. This Article Goes Over the Whole Field and Shows the Difficulties from which All Types of Recreation are Suffering To-day

By CHARLES GRAVES

A SUB-EDITOR in the *Bath Weekly Chronicle and Herald* recently showed his flair for creating local interest in distant news by putting up the following headlines :—

JAP SUCCESS HITS BATH.
FEWER GOLF BALLS FOR APPROACHING COURSE.

How right he was !

The Japanese successes in the Far East, following on Hitler's conquest of Europe, are now putting a semi-colon, if not a full-stop, to the manufacture of most sports goods and games except those destined for the Navy, Army, Air Force and, since last week, the Home Guard Air Training Corps, Cadet Corps and Fire Service. To begin with, the quota of sports goods, games and toys is now, on an average, one quarter of the 1939 values. As prices have risen, this means that the actual numbers that can be sold are even fewer. Apart from that, rubber may no longer be used for the manufacture of football bladders, for tennis balls, for squash balls, for golf balls, for the handles of tennis rackets and cricket bats, for the faces of ping-pong bats. The manufacture of golf balls has been completely forbidden until the end of the war. Already there are notices in golf professionals' shops that they would like old balls returned so that their rubber core can be re-covered. (How long gutta-percha will be available I don't know.)

Steel golf clubs will naturally not be manufactured any more. In any event, there is a shortage of skilled steel workers in the munition factories.

Cricket will suffer just as much. The men who can turn a cricket bat are needed for more important jobs in the aircraft factories. Besides, cricket balls have an interior of cork, and cork can no longer be used for games.

Even if you have enough old tennis balls, or can buy some from the remaining stocks, you will get no more catgut for your rackets, nor even the thin steel wire meshing which was already being used as an *ersatz* substitute.

So much for the majority of outdoor sports. But it must always be borne in mind that the fighting services and the organisations mentioned above will still be able to obtain these goods. Equally, certain firms who have specialised in export will continue to receive support from the Government, both with labour and material—especially when they have temporarily amalgamated with others and have become what are known as nucleus firms.

Practically all the big toy-making and games-making concerns are directing 90 per cent. if not 100 per cent. of their war effort to munitions, and it is a queer commentary on civilisation that the machines which made dolls' eyes are now making one of the most secret and intricate devices on the instrument panel of fighter aircraft.

Altogether, it looks as though this Easter will usher in the least sporting seasons that Great Britain has ever known. Of course, many people consider that the Englishman's love of games has been largely responsible for his lack of training as a seaman, soldier, or airman. So perhaps it is just as well.

Now let us take indoor games. One firm was producing no fewer than 3,000,000 ping-pong balls and 3,500,000 baby-rattles in a year. These articles were all made from celluloid, and celluloid came from Japan. . . .

Billiard tables need a slate bed. Even if the quarries of Blaenau Festiniog were able to divert their product to billiards, the cost and difficulty of transport would be almost insuperable. The special wood required for billiard cues is an added factor. So is the calling-up of the skilled men who made them.

Shove-halfpenny boards in future are to be made of mill-board covered with a smooth surface paper which, when rubbed with chalk, produces the slippery surface suitable for this most delicate of public-house games. The ban on the use of metal for games will presumably affect dart boards, too. Toy soldiers of lead and other metals make an automatic exit. So do scale-model aeroplanes and battleships, motor-cars and trains, if made of metal.

In peacetime sets of chessmen all came from France and were made of boxwood (except for the more expensive ivory sets). Before the ban on metal was imposed, ingenious manufacturers were making chessmen out of scrap-iron and lead. I have a set myself—made out of old newspaper type melted down and re-cast. Now they are making chessmen out of bakelite and, horror of horrors, producing them in the shape of draughts, with only a die-stamp to tell you whether they are pawns, queens, bishops, knights, castles, or kings. Chess, I may say, has become wildly popular, particularly in the Services. Book after book on how to play the game is published and goes promptly out of print.

By contrast, dominoes have fallen largely from favour, and there are few demands from the Services for this good old game. Draughts are pallidly popular, but lotto has gone forward with leaps and bounds. As for ludo, it continues to be the craze of the Royal Navy under the name of "Ukkers."

In the Royal Air Force I have noticed at station after station that what are known as exclusive games are very popular. These are, technically, backgammon, bezique and picquet, among others. These games have short, sharp bursts of popularity in the dispersal huts and the ante-rooms, particularly the former. But they are very much a squadron craze. Thus, when I visited a station from where one of our most distinguished night-fighter squadrons is defending London, everyone was playing picquet. At the same station there was a squadron of day-fighters. These pilots played nothing but bridge. (The R.A.F., as a whole, all play volunteer snooker with a white ball known as Bonzo counting as 25, but money never changes hands.)

Only four firms make playing-cards in England, and there is already a shortage. Playing-cards have to be made by a special process to prevent any cheating. And while not suggesting that anyone should start to buy up and hoard playing-cards, I can certainly advise the desirability of seeing that you are fairly well stocked. Everyone knows that there is a paper and cardboard shortage. . . .

Since the war several new card games have been brought out. These embody the principles of the Stock Exchange, golf, the black-out, traffic control, air battles, motor racing, even air-sea rescues. An attempt to revive mah-jongg was a comparative failure.

At least there is no restriction on certain educational toys and painting-books for children, and anyone can make toys without Government interference provided that the sales do not amount to more than £100 a month. When this occurs, the manufacturer has to be registered and a certificate secured. These are reissued every three months, and are not always given when demanded.

In the past, fortunes have been made out of new games. It was an innkeeper in Tennessee, named Carter, who invented midget golf. Lexicon was the idea of David Whitelaw. Pin tables, monopoly, put-and-take, yo-yo and ping-pong (I still refuse to call it table tennis) have been a craze. Pin tables and ping-pong, of course, are still excessively popular.

Even with the war still on, it is possible to make a considerable sum of money out of a new card game—if it catches on. I myself have registered "commando," with quislings, tommy-guns, naval assault craft, gun emplacements, barbed wire and the like. I am told that the routine arrangement is £100 down and 10 per cent. of the royalties. If a game like this caught on, it might well be worth £500.

Only since the war have dolls been made in England. Previously they were almost a monopoly of Germany. This winter German toys in Switzerland were right up to pre-war standard. It seems clear that Goebbels realises the value of this indirect propaganda. For if the Germans can export to Switzerland, for example, toys as beautifully hand-finished as they were before the outbreak of war, it suggests that the German arms drive is not being strained in any way.

Postscript.—Here is a tip for anyone who is any good at cabinet-making or wood-carving. You cannot buy a new bezique set in London for anything less than several guineas—or so I am told. As the sole requirements are half-a-dozen packs of cards and two little wooden boards with movable hinges, it seems a snip.

IN THE ROYAL NAVY "UKKERS" IS A MOST POPULAR GAME IN THE WARD-ROOM : This is especially true of the submarine service. Elsewhere "Ukkers" is probably better known under the name of "Ludo"!

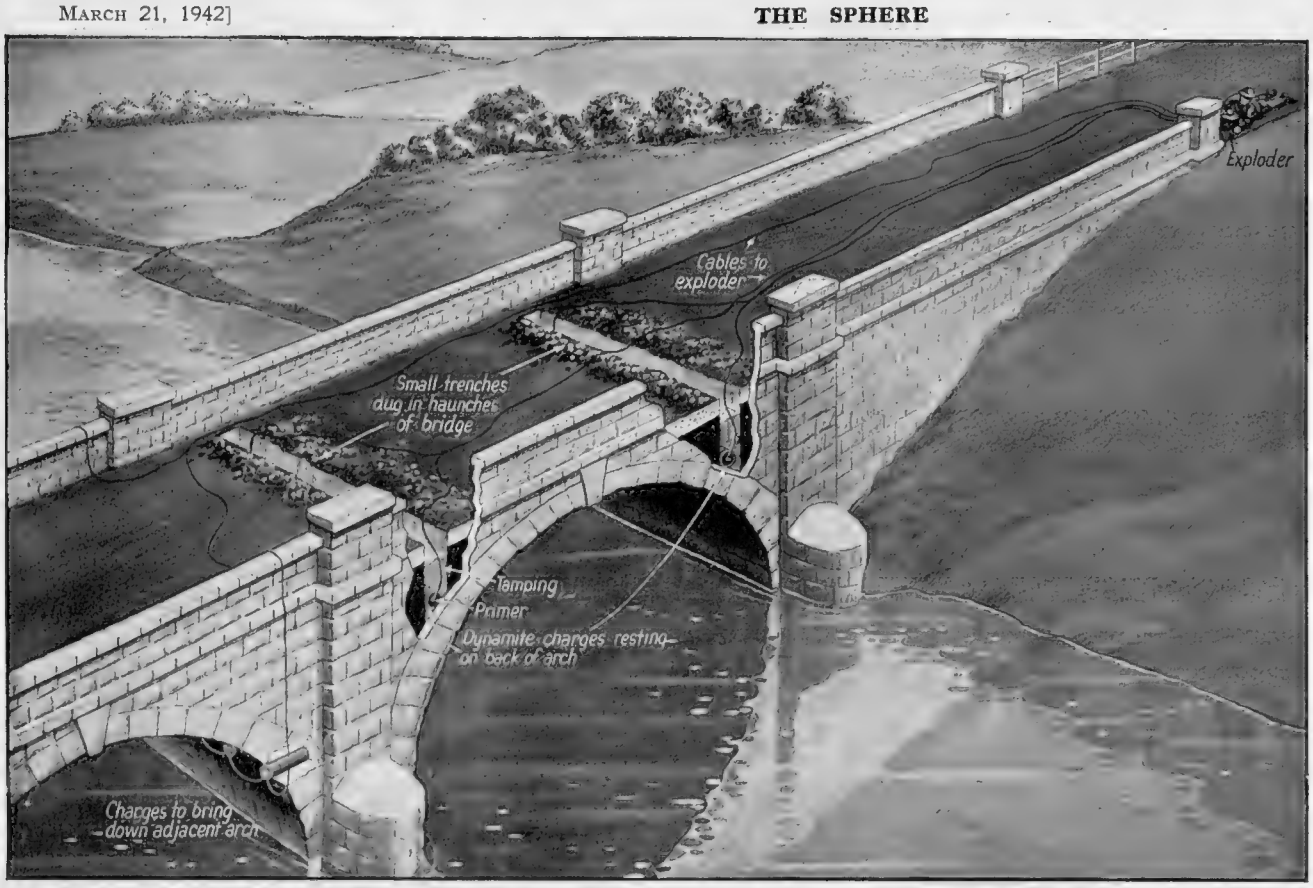
ONE OF THE WORLD'S GREATEST CHESS MASTERS, Señor J. R. Capablanca, who has just died in New York at the early age of fifty-three. From 1921 to 1927 Señor Capablanca was World Champion, and he was amongst the greatest exponents of the game the world has ever known. For many years he held an appointment in the Cuban Diplomatic Service

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

A VITAL TASK IN WAR

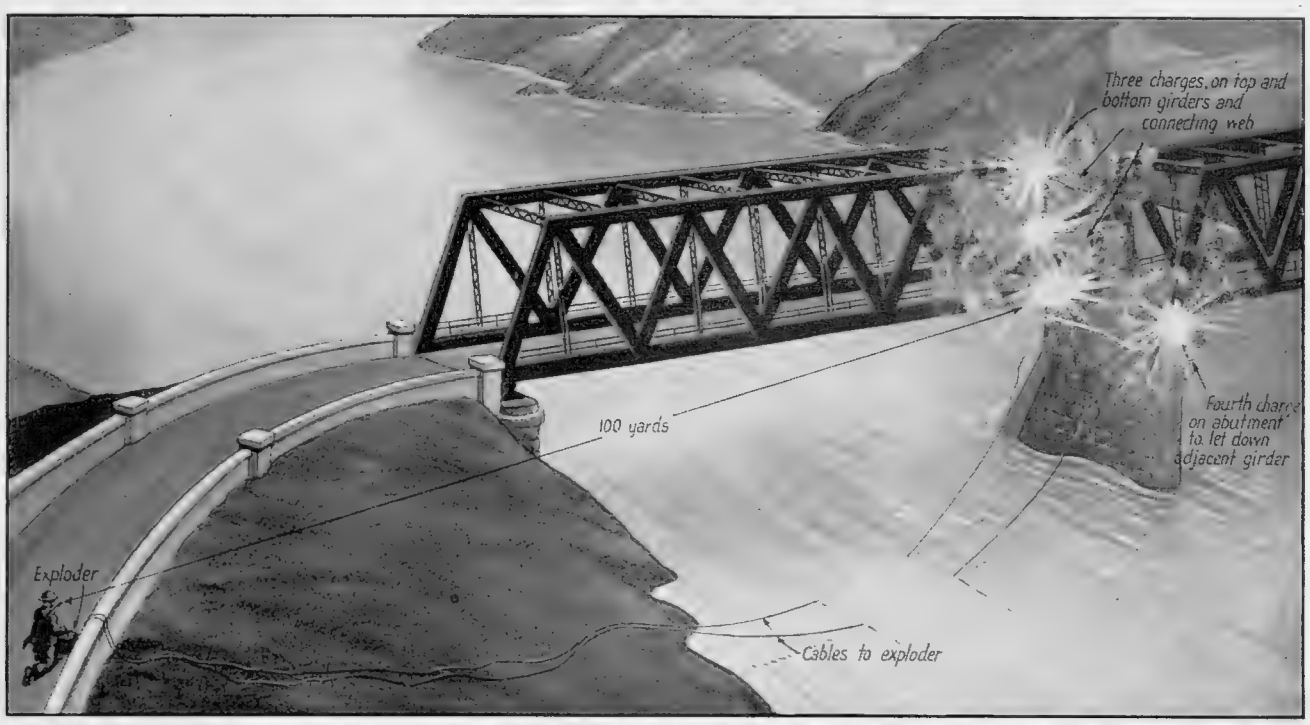
How the Demolition of Strategic Bridges is Carried Out

Drawings by L. Ashwell Wood



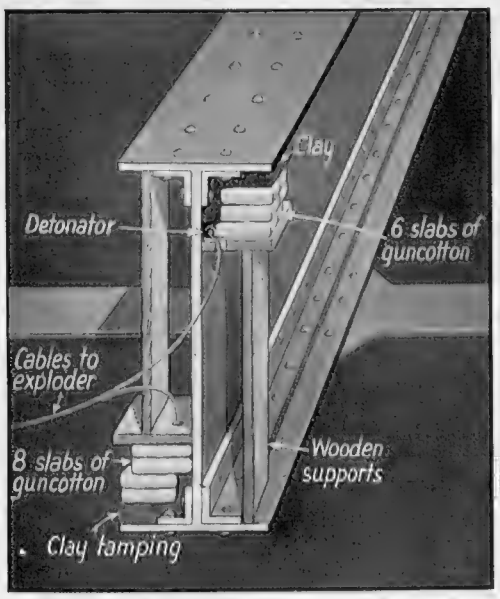
THE DEMOLITION OF A MASONRY BRIDGE IS NOT AN EASY, OR QUICK, TASK. During a rapid retreat, a complete demolition of this sort could not be carried out and a simpler method (shown in another drawing on this page) would have to be employed

On left—Either gun-cotton or dynamite is used for this purpose. Our drawing shows the dynamite being used. If there is time, the best method is to dig two trenches in the haunches of the bridge down to the back of the arch ring: this will ensure the complete destruction of the arch. Dynamite or gun-cotton charges are placed in the bottom and right across the bridge: an earth or clay tamping is packed round them to contain the explosive. They are then fired by a primer and fuse connected to the electric exploder. Further charges are placed in the abutment farther from the bank: these will bring down the adjacent arch as well. All charges must be fired simultaneously. The amount of explosive used is calculated on the width and thickness of the masonry. In a rapid retreat, simpler methods have to be used



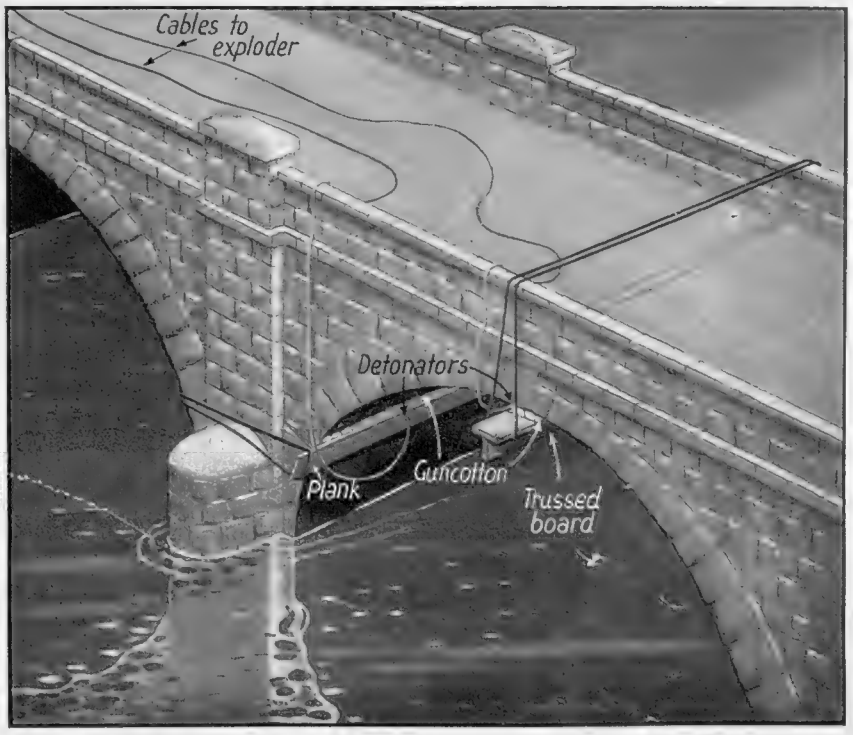
HOW A STEEL BRIDGE IS DESTROYED: The destruction of two spans is generally considered sufficient; to destroy the whole structure would take a very long time and huge quantities of explosive would be necessary

On right—Charges of gun-cotton to be fired by detonation are placed at vital points in the steelwork. These are the top and bottom girders of the first span, and on a connecting web: these will effectively cut the girders and bring the span down A fourth charge is placed under the bearers of the second span to dislodge this and destroy the top of the abutment. Completely to wreck a large bridge, enormous quantities of high explosive would be required, and much time would be needed to place and wire it. Two spans, however, are generally sufficient to hold up the enemy for some time. Details of packing the charges for a steel girder are shown in another drawing below



DESTROYING A GIRDER: This shows the method of placing a gun-cotton charge to cut the girder of a bridge. The quantity used is determined by the length and thickness of the steel—thus, in a 3-ft.-high girder, ⅜ in. thick, about fourteen slabs or 13½ lbs. would be needed. Both charges are fired simultaneously to produce a maximum effect

***On right*—A HASTY DEMOLITION BY GUN-COTTON:** When time or the presence of the enemy will not permit of trenching the vital parts of a masonry bridge, quicker methods must be used. A trussed board is placed under the crown of the arch and held tightly against it by ropes. In between this board and the arch are placed charges of gun-cotton, right across, all connected to the detonator. The abutment of the bridge is treated in a similar manner but with a plain board as shown. The whole is fired simultaneously and will bring down the arch and part of the abutment



TWO NEW DANGER-POINTS in the BATTLE OF COMMUNICATIONS

The Importance to the Allies of Fort Lamy, in Central Africa, and of the Vichy-Controlled Island of Madagascar

By FERDINAND TUOHY

"OFFENSIVE action in defence of communications" seems to epitomise the newest and most pressing task, self-recognised, of the United Nations. The best chance the Triple Axis has of winning is to cut as many of their opponents' lines of communication as possible and to keep them cut. Not all are on the sea, but shipping is emphatically the pivot. We may have, in that somewhat meaningless phrase, "four-fifths of the human race with us," but if the main fighting bodies of this mammoth paper company should be severed one from the other, the war could not be carried on offensively and resultant isolated defensives would generate every hope among enemies who swear by the strategy of "one by one."

At the same time it is recognised that to try and be represented everywhere in the world battle line is to court being weak everywhere. The hour has struck when the Free Allies must select specific points at which to be strong, even if this means writing off some latitudes for the time being, and taking sizable risks with others. One is only too aware of the uncomfortable number of places which, as it is, call for concentration of strength, yet the fact has to be faced that still they come: these spots vital in the all-presiding Battle of Communications.

When I last wrote of Fort Lamy in THE SPHERE, it was under the heading "Italy's African Dream." The time was shortly after Badoglio had given an inflated idea of Fascist armed prowess. The lightning Ethiopian campaign had gone to other heads besides Italian ones, but it was in Rome that I read in the official *Colonial Review* of a grandiose plan to roll a pathway from Southern Libya across French Equatorial Africa to Lake Chad and thence onwards through the mandated Cameroons to the South Atlantic port of Duala. The pioneers, it seemed, were already getting busy, with Balbo at their head. Balbo and expert desert mappers occasionally flew several hundred miles over French Equatorial; they had even ventured as far south as the Tibesti mountain range which sheltered the most advanced French outpost—Fort Bardai.

Was there an atom of seriousness in it? I inquired on my return to Paris and was adequately answered to the effect that the whole thing was "a dream of raw spaghetti." If the Italians ever tried any tricks towards Chad and its Fort Lamy bastion, they'd collect a pretty kick in the tummy. The army of North Africa would see to that, possibly with some air backing from Metropolitan France.

Who but an astrologer could have foreseen the position as it is to-day?

Defending Chad is a Free French column under General Leclerc, who finds ranged against him, to the north, Italians, Germans and Vichy French. As long as he remained in charge, Weygand set himself against any attack on de Gaullists, but Darlan has no such inhibitions, and there is good ground for believing that a recent bombing attack on Fort Lamy was executed by French Fascist pilots because the return journey would have been too far for aircraft based on Libya. Whether or not Vichy forces co-operate in any future Axis operations against Fort Lamy, we can be sure that all aid short of war will be given by Darlan to such Axis commanders as may be involved.

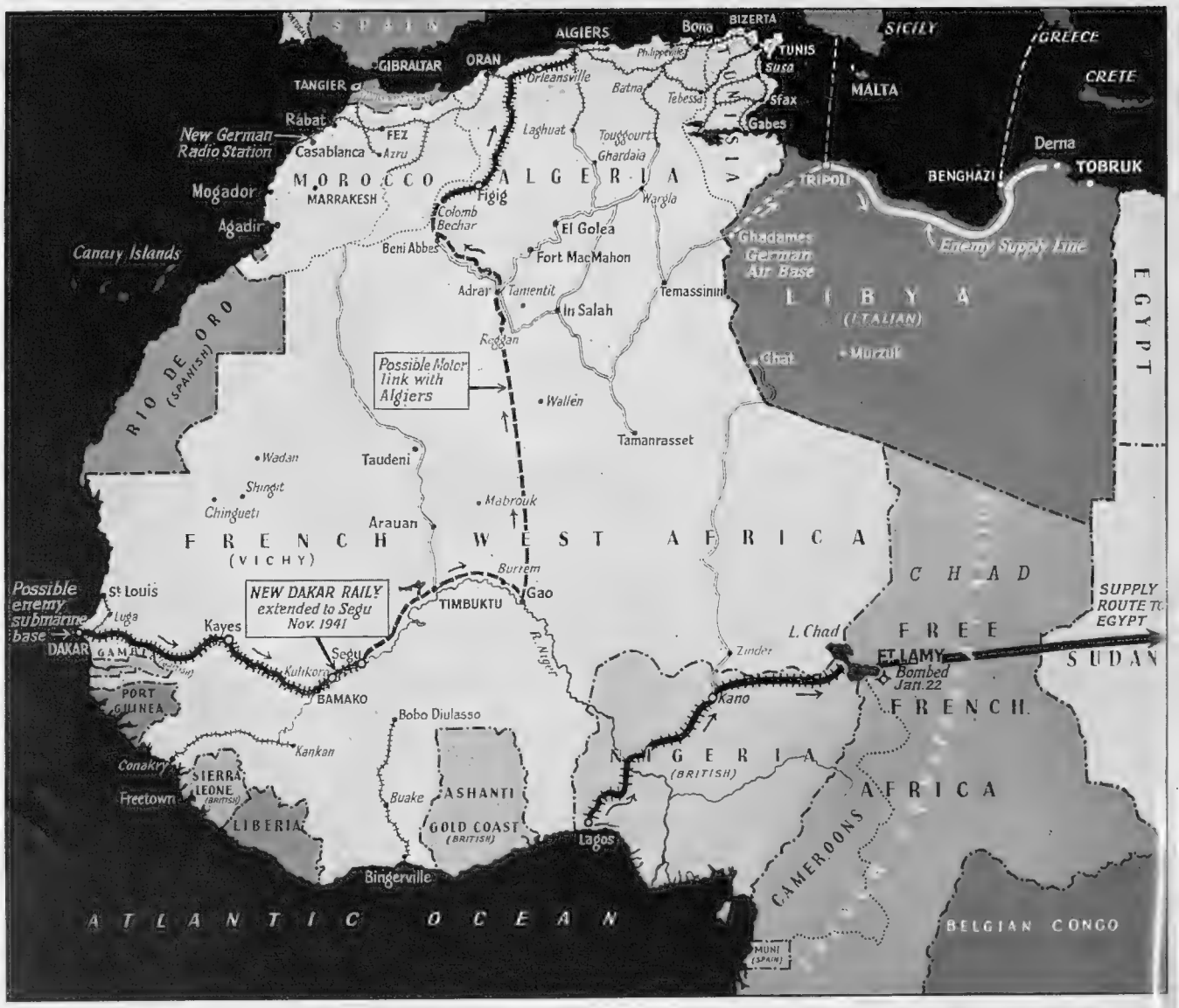
For Fort Lamy has grown greatly in importance since the days when Mussolini dwelt upon it on the map as a strong-point of the Lake Chad Territory. True, the Chad was recognised as a strategic key and cross-roads affecting all North and West Africa. It still is both. But superimposed on this importance is the appearance of this crucial region, and particularly of Fort Lamy, in the world Battle of Communications.

It is now well established that the Americans and ourselves are relying on new trunk roads and air routes linking the West African coast with the Nile and beyond. One trunk route runs from Duala to Yaoundé, capital of the Cameroons, thence through Banghi to Juba, in the southern Sudan, and so onwards by rail and water respectively to Khartoum and Mombasa. A second road leaves Yaoundé and passes through Fort Lamy, Abechr, El Fasher, and on to Khartoum. These roads, which are a proud product of Free French help, carry lorries and other vehicles in all seasons, and if they were cut, together with the air transport system depending on airfields along the way, it would be tantamount to another telling Axis victory. In essence this trans-African system is an attempted replacement of the lost Mediterranean supply line.

A successful air-borne assault on Fort Lamy would richly repay the Axis, since with this stronghold reduced, one of the trunk roads would be cut on the spot and the other menaced at Yaoundé, while the existing air transport system would be ruptured with the taking of the hub, Fort Lamy airfield. There have been signs of German and Italian air units feeling their way forward from Libya to newly-laid landing-grounds deep in the desert, which would be the obvious way to approach Fort Lamy. Air-General Student's presence in Sicily and Tripoli at the head of the *Luftwaffe* should certainly not lessen Allied preoccupations. Apart from his having conducted the Crete operations, Student is a former "fan" of French Equatorial Africa, which he visited more than once—and the Chad region—in the '20's. One can well imagine him to-day itching to be the first to draw close to the once German Cameroons.

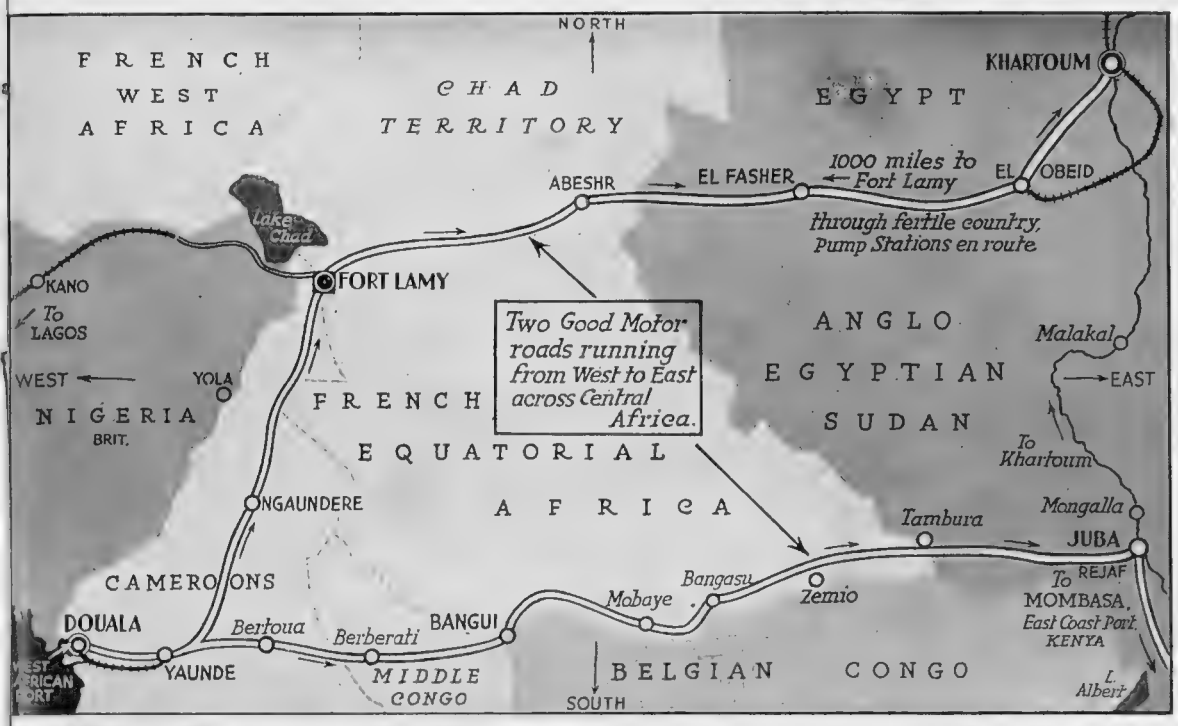
If the proper defence of Fort Lamy is to strike at hostile posts and landing-grounds which appear to menace it, General Leclerc's French Colonial troops have shown the way by advancing not less than 900 miles from Fort Lamy into Fezzan, in Southern Libya, and there extinguishing Axis garrisons, despite repeated German and Italian dive-bombing. The dive-bombers may have come from the hub airfield at Ghadammès, 300 miles south of Tripoli, and the suggestion has been made that paratroops be employed to wreck Ghadammès. Such would be the ideal.

Meanwhile, it would be unwise not to anticipate attack upon our brand of "Burma Road" across Africa, although the scorching aridity of most sectors suggests that the Axis would be attracted to green and fertile Chad, where white men can breathe. Last October I drew attention to the fact that General de Gaulle was a practised tank fighter as well as theorist, and what a pity the War Office



THE TWO RIVAL SUPPLY ROUTES IN WEST AFRICA: The British route runs from Lagos, through Nigeria, to Fort Lamy, in the Chad district of Central Africa. Vichy France has been striving to link up from Dakar to the North African coast, by way of Timbuktu and Gao, thus increasing the importance of Dakar for the Germans, who might use it as a submarine and supply base

AT THE IMPORTANT CARAVAN CENTRE OF GHADAMES, on the Tunis-Algeria-Libya border, the Germans have established a strong air base. It is thought that the ultimate purpose of this is to raid the British and U.S. supply routes through Central Africa

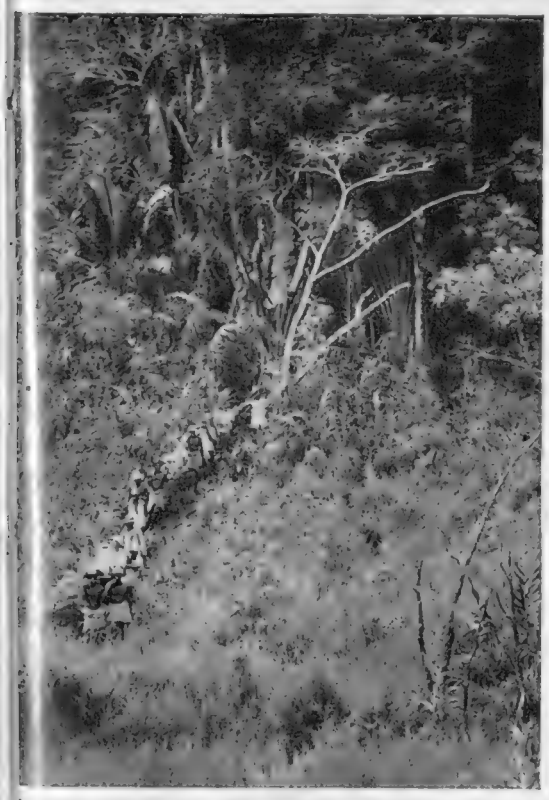


IN ADDITION TO THE LAGOS-FORT LAMY ROUTE (most of which is covered by railway line) we have also built two good motor roads across the heart of Central Africa : (1) from Duala, by way of Fort Lamy, to the Sudan ; and (2) from Duala, to Juba, and thence to Mombasa and the Indian Ocean

didn't see things that way too. The General might at least be consulted anew on the best way of making sure of vital Fort Lamy, which he visited last year.

Far away to the south-east, in Vichy's Madagascar, is a second new pin-point in the Battle of Communications. Diégo Suarez, fine natural harbour and naval base which has received new installations since France fell, is decidedly a place upon which the United Nations can profitably concentrate before the Japanese do.

It lies at the northern tip of an island which for 900 miles flanks South-East Africa and the



A GOOD PART OF THE ISLAND OF MADAGASCAR IS STILL JUNGLE : But the jungle has hitherto been but a slight obstacle to the Jap soldiers !

Indian Ocean. The Japanese are still some 3,000 miles away, but there are stepping-stones —Christmas and Cocos Islands, Mauritius and Réunion—and the Japanese must be heartened by the foreknowledge that, once arrived off Madagascar, even in a couple of submarines, they would, figuratively, be invited to lunch by the island's Vichy authorities.

Not a doubt but that we should witness a re-enactment of Vichy's Indo-Chinese technique of last summer, when bases were accorded the Japanese "as a temporary measure against de Gaullists, China and Britain, the two Governments (Tokyo and Vichy) promising military co-operation for the joint defence of Indo-China." Identical words could and would be used in relation to Madagascar, except that South Africa or the United States might be substituted for China

The Dominion and the Union are as closely concerned with Madagascar as is Britain. "There is no doubt," cables a Durban observer, "that with the Japs operating from Madagascar this great port of Durban, and also Cape Town, would be neutralised." As for the United States, what price the "whacker" port of Massawa, upon which, Mr. Lyttelton tells us, the Americans are just getting busy ? Not to mention the implications of the new American plan to reach out to India with direct aid. Though, of course, the matter goes much further still. Supplies for the Soviet Union through the Persian Gulf, British supplies for the Middle East through the Red Sea, supplies for Bombay and Chungking and even for Australia and New Zealand round the Cape—all will come under grievous fresh menace if the Japanese are allowed to repeat their Indo-Chinese squatting in Madagascar.

And since we are in the mood to face things, why duck the fact that Japs in this Vichy isle would have singular opportunity to repeat their hopping exercises, this time on to Africa ? From Diégo Suarez there are island stepping-stones, British and Vichy, a long way towards Dar-es-Salaam and Kenya, some 800 miles distant.

But a more enticing hop for the Japanese, who are apparently remaining by agreement on Portuguese Timor, would be the 300 miles from Madagascar across to weakly garrisoned Portuguese Mozambique. And so it goes on : Lorenzo Marques, capital of Portuguese East Africa, is within an hour's flight of Johannesburg and Durban by fast bomber. One can well understand the keenness of South Africans to jump into Madagascar whatever the Japs do or don't do. But what about the means ?

Admiral Platon, Vichy Minister of Colonies, is said to be flying to Madagascar, and where this Darlan enthusiast goes just one thing happens, as at Dakar : stiffer defences are organised against the Allies only, and the local garrison, wherever situated, is purged and infused with hand-picked Fascist strengthening from home. This special man-power journeys along with war equipment in innocent trading vessels, a continuous stream of which has been allowed past Gibraltar, Madagascar-bound, since France went (officially) out of the war. Madagascar has already received materials for fitting out new airfields and for adding to the fortifications of Diégo Suarez, Majunga, Tulear, and other rare harbours, while it is unlikely that Port Louis, on adjacent Réunion, has been neglected. On the homeward voyage to French ports, these Vichy vessels carry supplies destined for Germany and Italy—or they did up to our capturing a convoy last autumn.

Then there is this : were the Japanese allowed on Madagascar, they would mingle with a local population paramountly of the same Malayan, Melanesian and Polynesian stocks which stood so deferentially aside or played fifth column throughout the recent Nippon overrunning of the South-West Pacific islands.

The whites of Madagascar, about a score thousand, nearly all French, would have as much to say as have their sorry French opposites in Saigon and Hanoi to-day. The Madagascans, numbering 3,500,000, have had small use for their white masters in the nigh half-century since General Duchesne landed at Majunga. They have risen more than once, the last time in 1916, but bad physique and disease make the men poor soldiers.

In fact, the women wear the pants, as do native women nowhere else—a legacy of Madagascar's famous queens of the nineteenth century. But the point is that the islanders have not responded to Westernising processes nor to Christianity, and that for the greater part they conserve ancestor worship and worship of the spirits of nature ; so very much like the Japanese.

Further resemblance in the staple diet—rice. Vast rice-fields constitute the chief product. The French have developed coal-mining, sugar and rubber plantations, but the gold-mining which largely attracted them has proved rather a flop. Factories have materialised in the past decade, but poverty of communications in often mountainous country has been an obstacle. The future Marshal Joffre built the island's roads under the legendary Galliéni, "maker of Madagascar," and these roads, helped by coastal traffic and a measure of air transport, unite the few and far between centres of habitation.

THE ISLAND OF MADAGASCAR, and what it has to offer to the Japs. If report be true, the enemy ha already cast longing eyes towards this rich, Vichy-controlled island in the western part of the Indian Ocean. With the example of Indo-China in front of us—where Vichy ceded everything to Japan and thus laid open the road to Singapore—it would be well to watch their next moves in connection with this rich and fruitful island. For Madagascar has much to offer to the hungry and avaricious Japs, as indicated in the map above !

MEMORIES OF FIFTY YEARS—

An Experiment in Autobiography—VI

By J. G.

PUBLIC-SCHOOL EDUCATION.—I am well aware, and freely concede, that conditions in private and public schools in the 1930's were altogether different from those obtaining at the beginning of this century. Humanity and fresh air had blown in and dispersed a great deal of stuffiness, brutality, boorishness, convention and snobbery. The masters had become something more like elder brothers in their relations with the boys, and constantly grew less aloof and pedagogic. Christian names were taking the place of surnames, and boys no longer dreaded to reveal the awful secrets of their home life and sisters' names. It had become no crime to have a sister, even if her name was Amelia, and no shame to trot about the cricket-ground a little brother in shorts, or even an aunt untidily or unfashionably dressed. Anonymity and conventions, and that snobbery which they induce, had greatly declined, while bullying and brutality and mass-cowardice and mass-cruelty had steadily fallen from the peak of the 1860's. But during my time at school, Edwardian snobbery, Victorian convention, and a great deal of deplorable bullying and mass-cowardice still existed, and life at school bore all too little relationship to a happy, liberal and tolerant family life. I cannot say that my schooldays were continuously or remarkably happy, nor, indeed, my four years at Oxford. I can in part account for it and may do so later on. I was not an abnormal boy, if it be conceded that an acute and apprehensive imagination, highly-strung nerves, an almost morbid shyness and diffidence, and a certain dread of crowds are common enough failings among young males. I was neither a sap nor, altogether, a prig. My abilities were about the average, my powers of application below the average. I pulled my weight at games, gained my place in the first elevens of both schools at cricket and football, played in the Freshers' match at Oxford, and sometimes represented my University as "second string" in the long jump and as a full-back at hockey. (I still like to remember—and to measure out for the admiration of my children—the 21 ft. 9 ins. which I once achieved at Fenner's against Cambridge; a very moderate jump by modern standards.)

It would be gross ingratitude and misrepresentation to paint a tragic or even a gloomy picture of my school and Oxford years. It is true that up to (and including) my first going to Oxford I wept tears when I left home, but I was emotional by nature and have ever found it difficult to control my feelings. I can recall scores of memories of minor triumphs and bright occasions of laughter and pleasure. What are blanks in my memory are the more solid comforts of existence, contentment, constructive planning and working, that sense of permanence and security which still, and until 1911 at least, were available for the enjoyment of normal people. It may be that my subconscious mind saw the writing on the wall, saw that these things were soon to be taken away for a generation or more, that the bottom was already knocked out of them, and that it was of no use to depend upon them. Or it may be that, for some natures, youth for ever is but the era of 1914-1942 in microcosm. Whenever I read the reminiscences of Oxford written by my contemporaries, I realise all I owe to Oxford and much of the pleasure I enjoyed there.

The virtues of communal education on the public-school system, and the liberal opportunities for a wider outlook afforded by the Universities, are plain to see and not to be denied. Accepting these benefits generally, it is yet possible to question the preponderating advantages of a public-school education for certain types of boys. It is a fact worthy of record that among my own acquaintances the two men whom their friends would generally place in the front rank as good mixers, sound leaders in opinion and even in action, good company, shrewd counsellors, highly educated and informed, sportsmen, in the best sense, and well versed in country lore, never went to public schools. One is now a Minister of the Crown, the other a practical farmer.

The Boot of Chance.—I finished reading the newly-published biography of ————, a moderately successful public man of good average ability. And I fell to wondering whether, in writing biography, there does not exist a rigid convention which precludes the painting of a true picture of the subject. I mean that customary effort to prove with chapter and verse that every stage in the "successful" man's progress was brought about by his own will, his own forethought, his own determination, all directed to that very end. It seems to me that the vast majority of men who, possessing the necessary qualities, achieve moderate success owe infinitely more to chance and to circumstance than to sustained determination directed to *definite* goals. The biographer gives us the conventional dreams of youth, and thereafter twists the facts to make those dreams come true.

But, in sober fact, with ninety in every hundred subjects of biography, a healthy self-confidence met Chance at the cross-roads; circumstance pointed them right or left; willy-nilly, they were borne forward by the tide of hastening humanity; better men than they have stumbled and been trampled underfoot; worse men than they have been kicked upstairs by the senseless boot of chance. One does not deny the importance of application, industry, will, *character*; but one must not underrate the enormous power for good or evil over a man's destiny of circumstance, environment and pure chance. Suppose that Sir ———— ———— had enjoyed a happy childhood? Might not that blessing have given him those qualities which make for normal popularity at Sandhurst? What makes a rebel but deep-rooted grievances against society? And (in nine cases out of ten) what more certainly than pure mischance at some stage in his life consigns a man of ability and ambition in the hour of his country's need, to kick his heels in Brixton Prison instead of giving good service in a public office of importance? It is still our habit to speak with veneration of the giants of the Victorian Age. We are only just beginning to modify our estimates of their greatness in the light of our realisation of their opportunities.

To what heights might not the leading statesmen of our unhappy age have attained, the poets and writers and artists and scientists, if they could have used their abilities for the permanent good of mankind in a world which enjoyed security and a sense of permanence, and the leisure which those circumstances afford?

The Tragedy of Claustrophobia.—And now, to apply my theory of the Boot of Chance to my own case, I will refer very briefly to an unhappy misfortune in my own boyhood which was to have a crippling and tragic effect on the best years of my life. For forty years it has been a close-guarded secret, locked in my heart. But now, in 1942, light and air have been generally let in to all skeleton- and junk-holding cupboards, and I see no longer any good grounds for concealing a tragi-comic, interesting, medico-psychological problem. At the age of fourteen, I had a bad attack of measles at school. I was turned off from the sanatorium rather too soon, while still very weak, and was sent home to convalesce. My mother was to meet me at Guildford. To reach that place, I had a slow cross-country train journey. The guard locked me into an empty third-class carriage. After about an hour, I became faint. I dared not ring the communication-cord, though I felt that consciousness was leaving me. Another hour of intense mental agony sowed the seeds of claustrophobia. I became conscious that I was trapped, and *couldn't get away*. From that hour, this dreadful disease of the mind dominated me, with ever-increasing force; with complications, permutations and desperate imaginations; and it affected and limited every action and plan of my life until I was over forty years old. I could travel in no train that had not a free corridor; I could not travel in the Underground; nor go in a lift, nor endure to sit in a church or in the centre of a crowded room. I could not walk along a straight street, nor cross an open common. I suffered all the terrors of the damned in my first and last experience of flying. I dared tell no one. It was a "shameful" and guilty secret. A dozen times I must have failed to take an agreed journey on finding that the expected "corridor-train" had not materialised. All my plans for my work or social pleasures had to be made on the basis of what I could accomplish in the matter of transport, and my friends and acquaintances must often have thought me rude and boorish, and sometimes mad. What a tragedy of youth and repression is here unfolded! What a tragi-comedy of human life! Relief arrived at last when the motor-car came within the compass of my purse, and I was able to travel by road whither I would. When I look back and sadly assess the degree and *damage* of the daily, hourly mental torture which I endured continuously and increasingly from boyhood to middle-age, I allow myself a heart-cry, while I acknowledge with philosophy that the "tears of things" bedew all human activities. But none can be surprised if I embrace the theory of the Boot of Chance and do not subscribe to the view that youth is the happier part of human life. Yet my tragedy is no advertisement for psycho-analytical treatment. I should have gained nothing had I put my case before a specialist in nervous diseases. For I knew from the start of my malady the *fons et origo* of my obsession, and should have gained no confidence in fighting it if a specialist had traced it to its source and nailed its cause down for my inspection as a perfectly normal, medical and explanatory fact. Still, I will leave this tragic document in print in case it may be of interest to the alienist, or of comfort to a fellow-sufferer. There are more of them in existence than I realised for the best part of my life.

(The next article in this series will be published in the issue of April 4)

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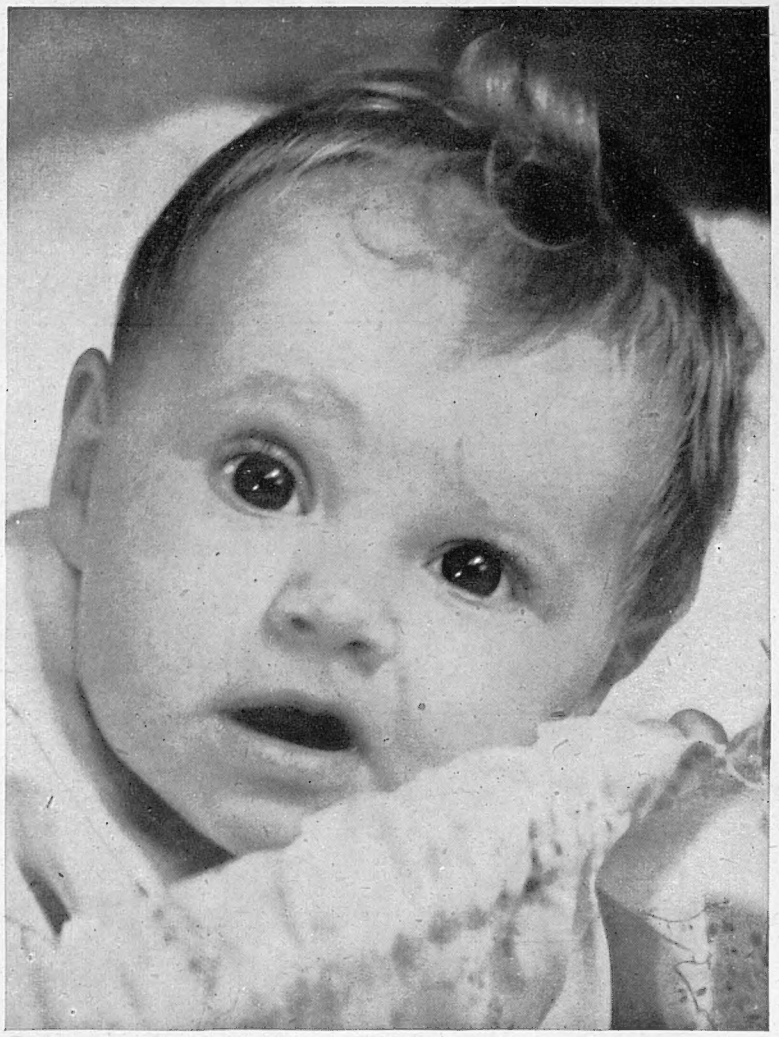

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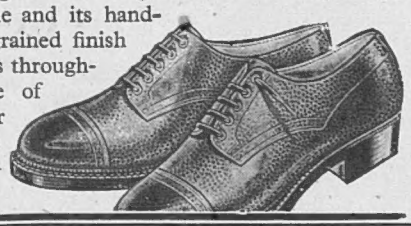

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